WRITE THE SCRIPT, SHOOT THE MOVIE, BURN THE DVD, GET RICH!

COMPUTER arts projects

THE IN-DEPTH GUIDE FOR DIGITAL CREATIVES

digital video special

MOVIES ON YOUR DESKTOP

How to create a professional short film on your PC or Mac

DV MASTERCLASS
50 expert digital video tips, plus brand new tutorials

EDIT IN STYLE
Cut your movie like the pros! Full software on your disc

HOLLYWOOD FX
Special effects made easy with our expert, step-by-step guides

SOUND ADVICE
Create a stunning royalty-free soundtrack for your movie

DESIGN THE DVD
Everything you need to know to produce and burn great DVDs

REVEALED!
HOW TO GET YOUR FILM ON TELEVISION

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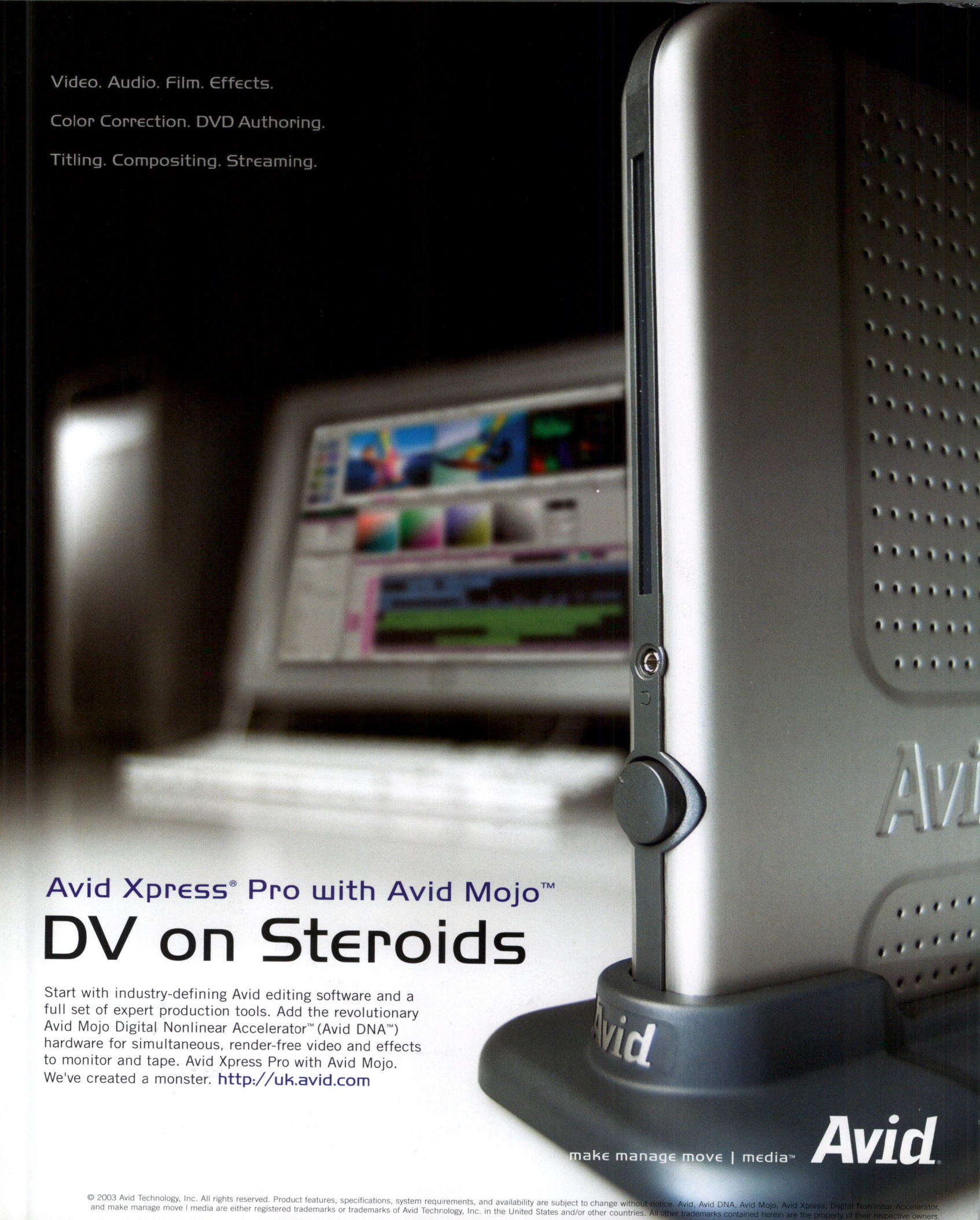
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Welcome

In the last decade, tools for producing films have gone from proprietary, gigantic and extremely costly to universally accessible, compact, easy to use and inexpensive. It's a true example of technology liberating digital content creation.

Creating a short film on your PC or Mac isn't as difficult as you might think. All you need is a good idea and you're away. Sure, there are some rules you'll need to abide by, and that's where we can help.

This issue contains all the technique, theory and opinion you need to get started in creating your own short film. You'll discover the secrets of getting good takes, the best way to capture and edit your footage, how to make a realistic composite and the lowdown on creating engaging titles and special effects. Even if you're just into one aspect of the above, the professional advice we offer is invaluable.

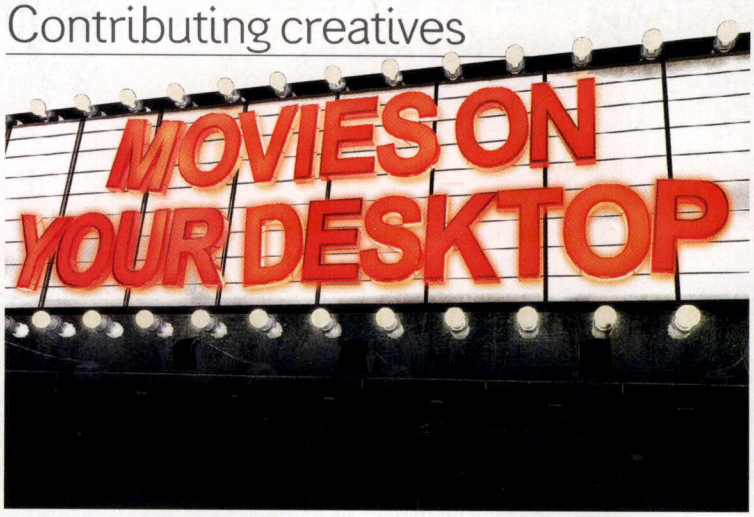
We asked filmmaker Chris Kenworthy to produce a short film exclusively for this issue. The result is *Flower Power* – a sci-fi tale of botanic experimentation. See the full movie on your cover CD and read on for the tips and techniques behind the film – from writing the script to burning the DVD. Enjoy the issue, and let me know what you think at the email address below.

Cheers!

Rob Carney, Associate Editor
[e] rob.carney@futurenet.co.uk

Tell us what topics you'd like to see covered in-depth in *Computer Arts Projects*. Contact us on: **rob.carney@futurenet.co.uk**

Contributing creatives



COVER ILLUSTRATION Simon Danaher

Simon Danaher will be a familiar name to *Computer Arts Projects* and *Computer Arts* readers. A freelance 3D artist and writer, Simon created our striking cover image using *Cinema 4D*.

[e] simon.danaher@ntlworld.com

Christopher Kenworthy

Christopher Kenworthy is a Lancashire-born novelist, film director and part-time actor, now living down under. He's currently writing for a handful of TV shows, and has been hanging around on the set of a science-fiction series being shot in Perth.

[e] thoughtfox@mac.com

Rob Chiu, The Ronin

The unique illustrative style of The Ronin's Rob Chiu graces the pages of this issue. We asked him to come up with a series of images illustrating the different aspects of movie-making. The results are stunning – turn the page for more on Rob's work.

[e] info@theronin.co.uk

We're always on the lookout for new artists as well as established creatives – so if you're interested in contributing to the magazine, please send some examples of your work to **[e] richard.llewellyn@futurenet.co.uk**

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Subscriptions – page 54
Future Publishing Ltd, FREEPOST, BS4900, Somerton, Somerset, TA11 7B
[t] Customer hotline: 0870 444 8455
[f] 01458 271 146
[e] ca.subs@futurenet.co.uk

Editorial [t] 01225 442 244
Rob Carney associate editor
[e] robert.carney@futurenet.co.uk
Ashley Young production editor
[e] casproduction@futurenet.co.uk
Kate Marsden designer
[e] kate.marsden@futurenet.co.uk
Roddy Llewellyn consultant art editor
[e] richard.llewellyn@futurenet.co.uk
Matt Gallimore senior CD editor
[e] matt.gallimore@futurenet.co.uk
Simon Holland CD editor
[e] simon.holland@futurenet.co.uk

CD problems [t] 01225 822 743
Technical support: ca.support@futurenet.co.uk

Contributors
Cover illustration: Simon Danaher
Illustrations: Rob Chiu
Contributors: Christian Darkin, Christopher Kenworthy, Mark Penfold, Garrick Webster

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Contact
Computer Arts Projects, Future Publishing, 30 Monmouth Street, Bath BA1 2BW
[t] 01225 442 244
[f] 01225 732 295
[i] ISDN: 01225 789 293
[w] www.computerarts.co.uk

Advertising [t] 01225 442 244
Lee Haines key account manager
[e] lee.haines@futurenet.co.uk
George Lucas senior sales executive
[e] george.lucas@futurenet.co.uk
Melissa Watkins classified enquiries
[e] melissa.watkins@futurenet.co.uk
Andrew Brain advertising manager
[e] andrew.brain@futurenet.co.uk

Production
Emily Mounter production coordinator
[e] emily.mounter@futurenet.co.uk

International licensing
Simon Wear international director
[e] simon.wear@futurenet.co.uk
[t] +44 (0) 1225 442 244

Management
Rachel Spooner senior editor
James Binns publisher
John Weir publishing director

Distributed by
Marketforce (UK) Ltd, 5th Floor, Low Rise Building, Kings Reach Tower, Stamford Street, London, SE1 9LS
[t] +44 (0) 20 7633 3300

Jason Comber trade marketing manager
[e] jason.comber@futurenet.co.uk

The Future Network
Roger Parry non-executive chairman
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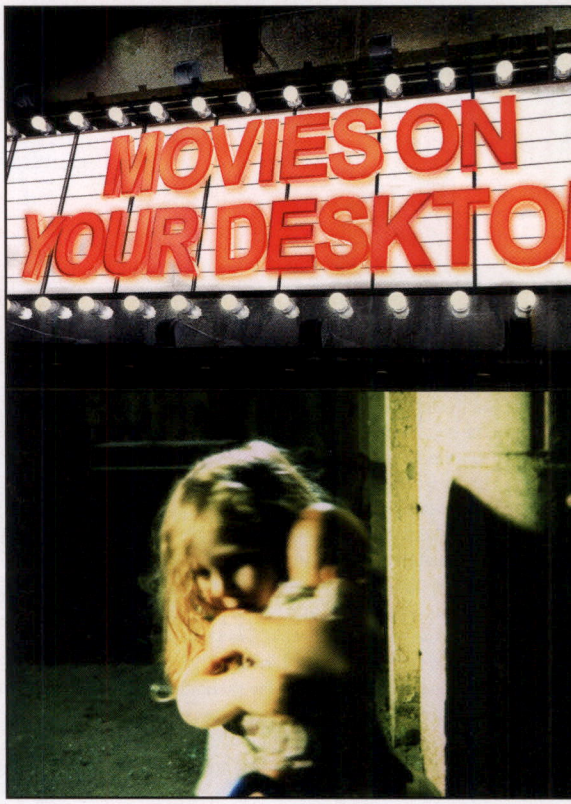

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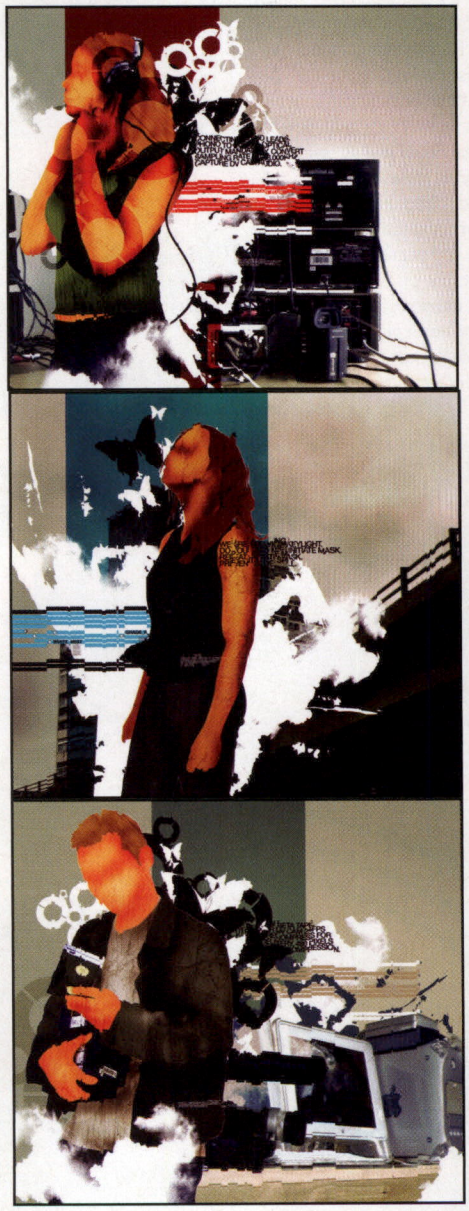
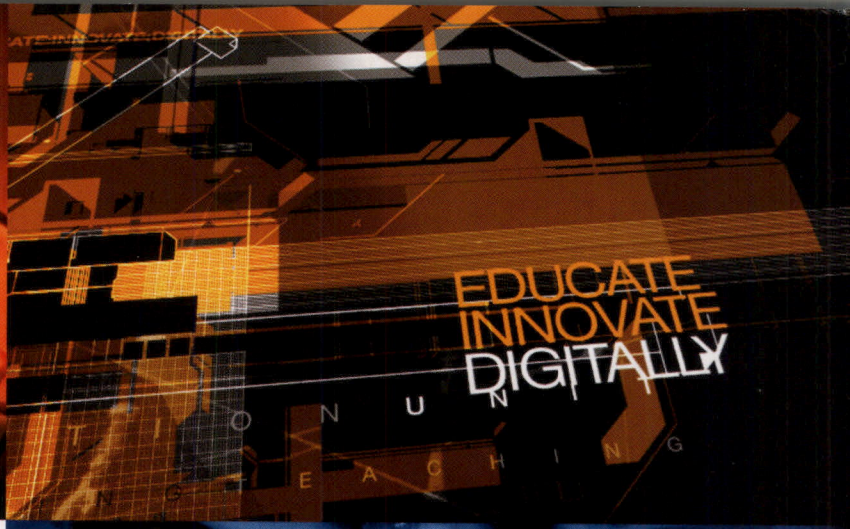
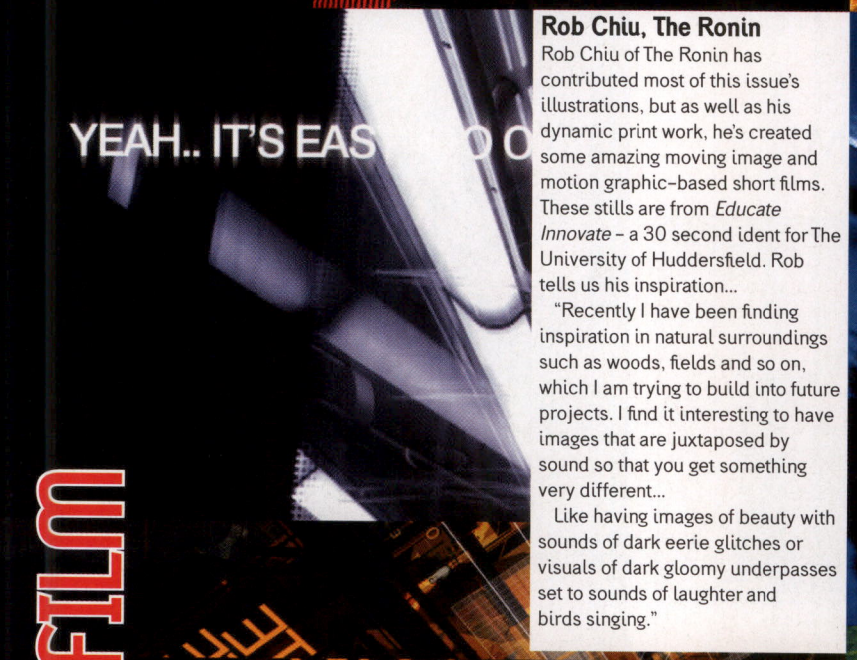


THIS ISSUE IN PICTURES...

Create a short film using only your Mac or PC!

SHOWCASE: SHORT FILM



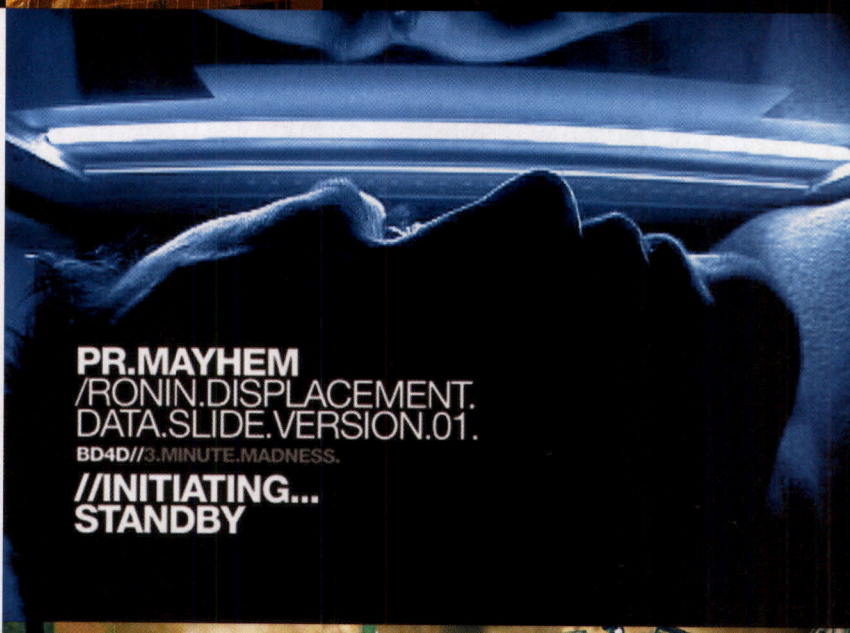


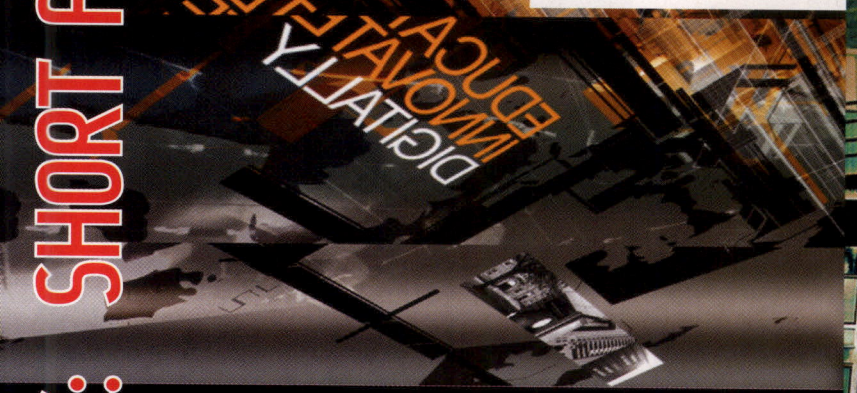
Rob Chiu, The Ronin

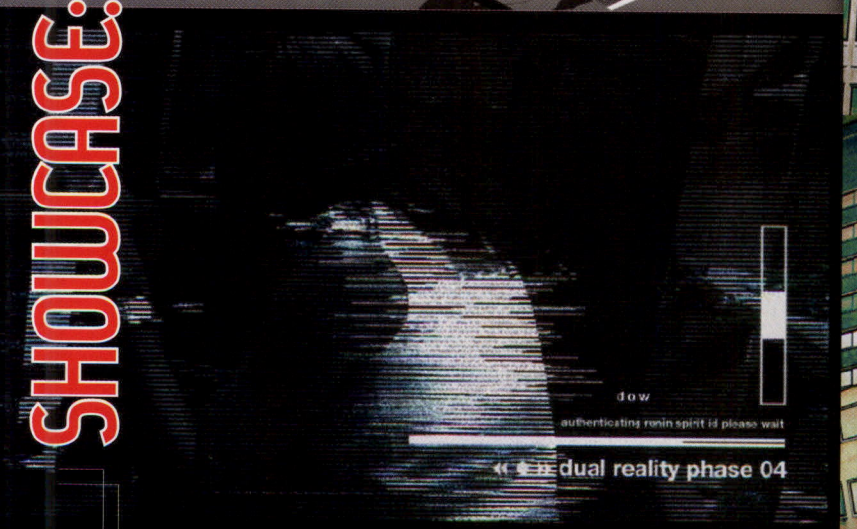
Rob Chiu of The Ronin has contributed most of this issue's illustrations, but as well as his dynamic print work, he's created some amazing moving image and motion graphic-based short films. These stills are from *Educate Innovate* – a 30 second ident for The University of Huddersfield. Rob tells us his inspiration...

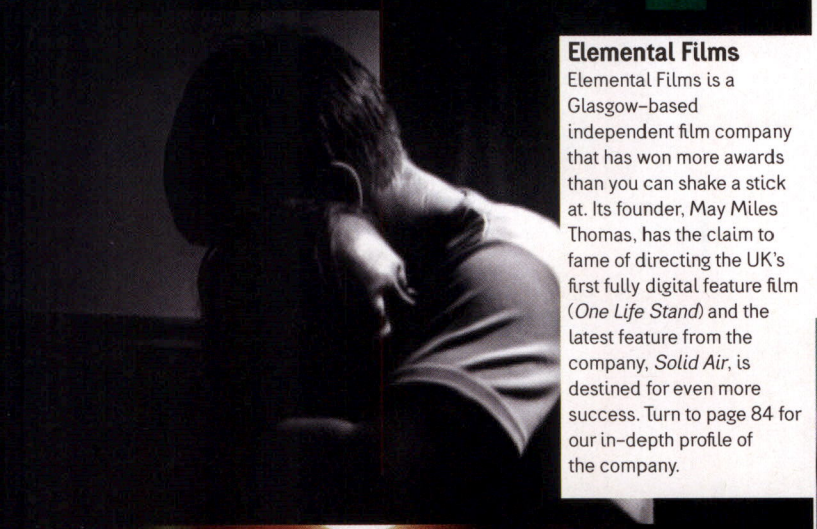
"Recently I have been finding inspiration in natural surroundings such as woods, fields and so on, which I am trying to build into future projects. I find it interesting to have images that are juxtaposed by sound so that you get something very different...

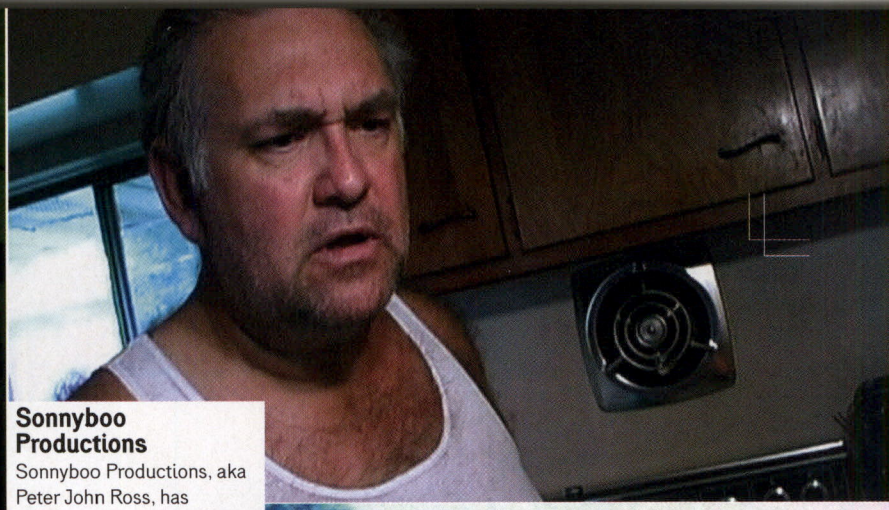
Like having images of beauty with sounds of dark eerie glitches or visuals of dark gloomy underpasses set to sounds of laughter and birds singing."

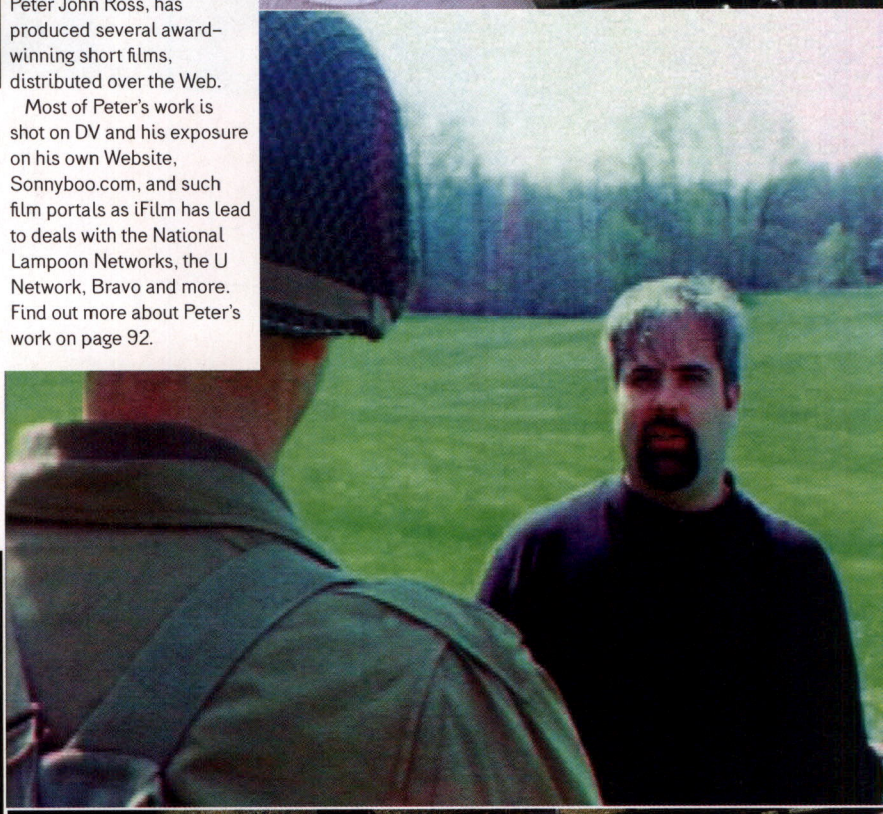


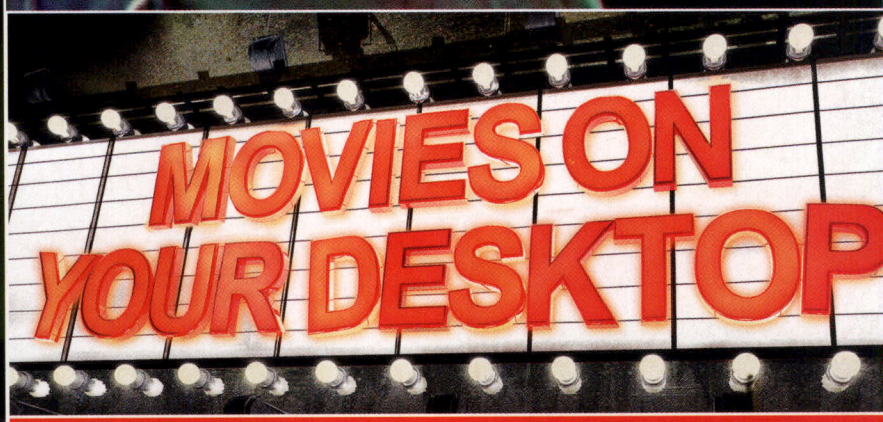












Elemental Films

Elemental Films is a Glasgow-based independent film company that has won more awards than you can shake a stick at. Its founder, May Miles Thomas, has the claim to fame of directing the UK's first fully digital feature film (*One Life Stand*) and the latest feature from the company, *Solid Air*, is destined for even more success. Turn to page 84 for our in-depth profile of the company.

Sonnyboo Productions

Sonnyboo Productions, aka Peter John Ross, has produced several award-winning short films, distributed over the Web.

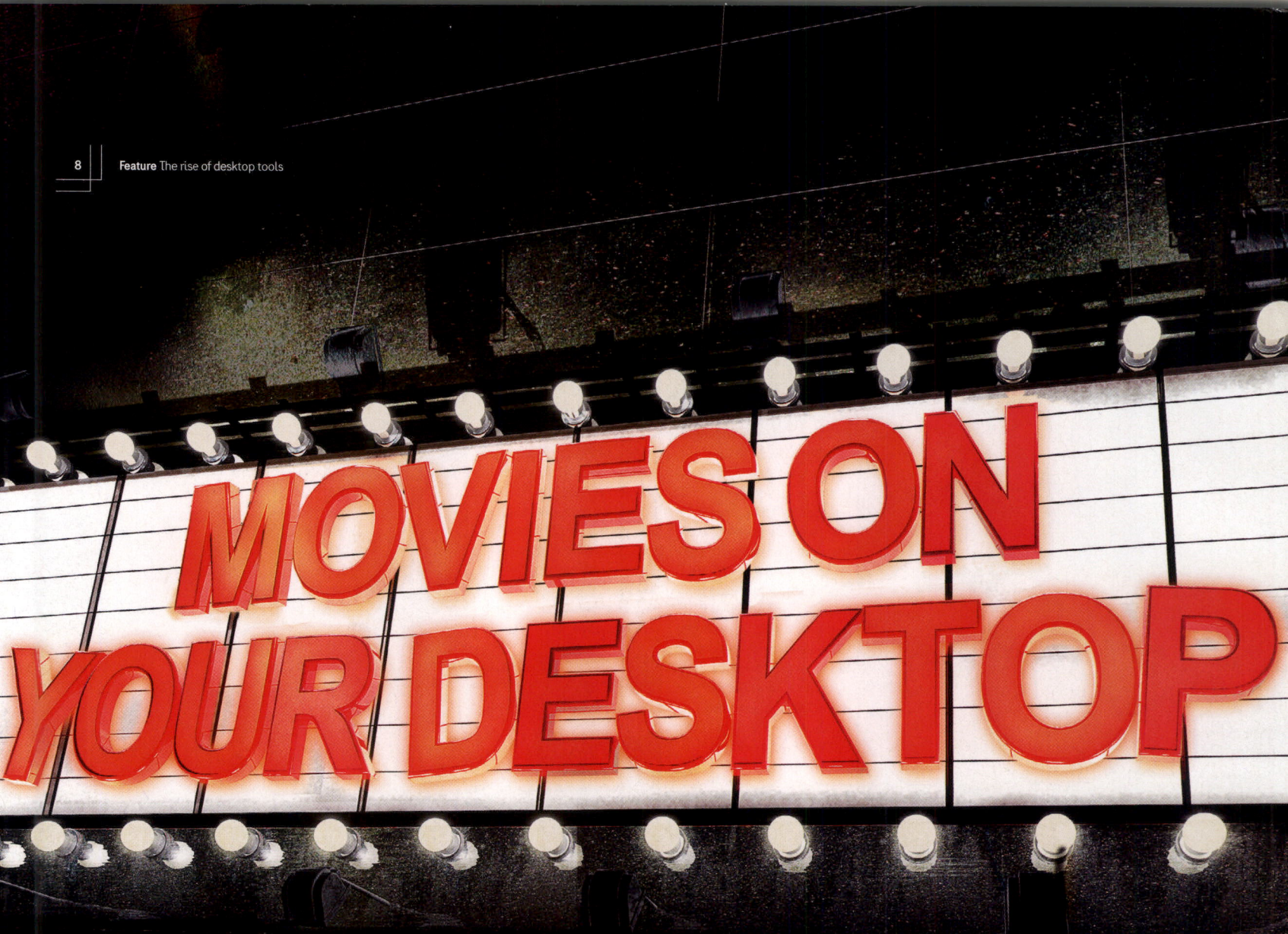
Most of Peter's work is shot on DV and his exposure on his own Website, Sonnyboo.com, and such film portals as iFilm has lead to deals with the National Lampoon Networks, the U Network, Bravo and more. Find out more about Peter's work on page 92.

MORE DIGITAL VIDEO?

Write in and tell us about your ideas for DV content!

Computer Arts Projects is looking to include more digital video content, and we want your ideas. Are you a DV filmmaker who would like to write tutorials? Or perhaps an industry expert wanting to contribute to features? Maybe even an enthusiast with a stack of great ideas? We'd also like to hear your opinions on whether we should be including more digital video content. So tell us what you'd like to see!

Write in and let us know by emailing rob.carney@futurenet.co.uk



THE RISE OF DESKTOP TOOLS

Video creation on your desktop has come a long way in the last 15 years...

Desktop video has changed the world. It's the reason why news from around the globe hits our TV screens seconds after it happens. It's the reason why the average visitor to London is caught on over 200 CCTV cameras per day. It's why *The Blair Witch Project* cost just a few thousand dollars to make, and why *The Matrix* got made at all. It's the way Kylie Minogue markets her underwear, and it's how Al-Qaeda sends its gruesome messages to America.

Video is the most powerful medium in the world, and in just a few years, it has moved from the hands of the elite and well-financed few into the hands of virtually anyone who cares to learn how to use it.

System errors

In the late 80s, when the first systems were being worked on by Newtek and Avid, few people could have had any idea that in just 15 years it would be possible to edit broadcast-quality material on any desktop computer. There were technical difficulties from the start.

"In 1987, when the Video Toaster project started, there were no off-the-shelf parts that would interface video to computers, which was irrelevant because computers weren't fast enough to do anything with the video," says Tim Jenison, the founder of Newtek and the recipient of an Emmy award for the Video Toaster's contribution to television.

Atom Films is just one of the Websites currently providing space for filmmakers to show their work. [w] http://atomfilms.shockwave.com/

Early desktop video was of limited quality. Computers just weren't fast enough to decode highly compressed clips.

"IT'S INFINITELY EASIER TO LOOK AT ALTERNATE TAKES [WITH NON-LINEAR EDITING]... YOU FIND YOURSELF BEING MORE COMPREHENSIVE OR EXHAUSTIVE THAN YOU WOULD BE IF YOU WERE STILL WORKING IN FILM."
ETHEN COEN, THE COEN BROTHERS

However, there were also difficulties in convincing editing professionals to make the switch. As Graham Sharp, Vice President of European Sales and Operations at Avid says: "We used to have big forums where people would say that digital video would never catch on because of the quality issues. We had a hard time explaining that what we were offering was an offline system – that edits could be refined using the *Media Composer*, and then you'd only need to go into a much more expensive traditional suite for the final cut."

A new way of editing

Up to that point, there were only two ways of editing: either on video by a process of essentially copying shots from a master tape onto an edit tape, or on film by physically slicing the film up and sticking it back together with Sellotape. Either way, it was a slow mechanical process. "Non-linear editing enables you to try things out, keep alternate versions, and this offers you a whole new level of creativity that didn't exist before," says Graham Sharp.

This flexibility is infusing all areas of film and video production. The Coen Brothers, responsible for *The Big Lebowsky*, *Fargo*, and *O'Brother Where Art Thou* had always worked traditionally, splicing film by hand, until Associate Film Editor Dave Diliberto, who had worked with them on previous films, encouraged them to switch to Macs running *Final Cut Pro* for their new movie, *Intolerable Cruelty*. "It was possible to store the entire film within the CPU," he told Apple Computer in a recent interview. "Looking at the Macs, it looks like two guys with two computers. It doesn't look like something that could cut a whole movie."

"It's infinitely easier to look at alternate takes," said Ethen Coen. "You find yourself looking at more. You find yourself being more comprehensive or exhaustive than you would be if you were still working in film." His brother Joel agreed: "You can cut about twice as fast as we're used to. That's kind of an issue for us, since we don't start cutting until after we finish shooting."

Revolutionary kit

Hardware and software developments have driven this revolution. Users expect much more and competition is now a lot keener. This is especially true at the cheaper end of the market where packages like *Pinnacle Edition* (once known as the high-end editor *Fast Purple*) have made their way down from the broadcast studio to compete with *Premiere* and its peers. Also, very cheap and free programs such as *Ulead Video Studio*, *Pinnacle Studio*, *Videowave* and *Avid Free DV* are introducing stronger and stronger toolsets (*Avid Free DV* costs nothing but includes Avid's high-quality editing tools.)

On the hardware side, low-cost DV cameras have enabled even home users to shoot broadcast-quality video, and DVD recorders have enabled anyone to output it in a watchable form. FireWire has given us full-quality capture, and hard disks are now big enough and fast

THE BEST DV TOOLS

VIDEO TOASTER
www.newtek-europe.com
2995 EUROS

COMBUSTION 3
www.discreet.com
£851 inc VAT

FINAL CUT PRO 4
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ULEAD VIDEO STUDIO 7
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MOVIE EDIT PRO 2004
www.Miagix.com
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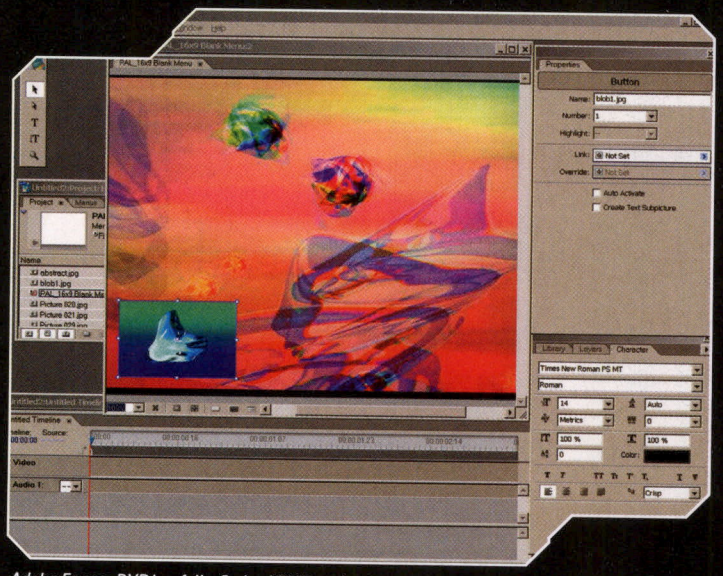
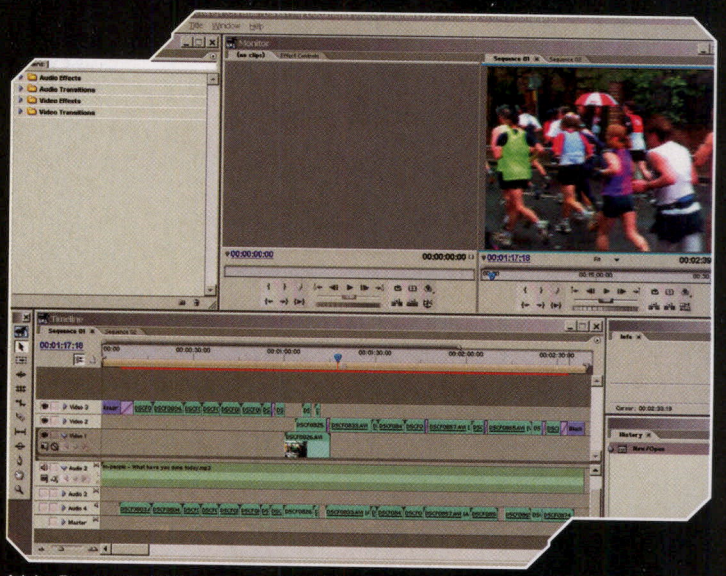


Adobe Encore DVD is a fully-fledged DVD-authoring application, with excellent *Photoshop* integration. Creating professional-quality DVDs has never been easier.



Adobe *Premiere* is still the most popular mid-range editor available, but it's coming under pressure from powerful rivals.

enough to store decent amounts of footage. Finally, processors now have the speed to create effects, transitions, titles, and filters in real time.

Programming pressure

The flexibility and speed of desktop video editing along with the increased availability of home video set-ups in turn has put the pressure on the TV industry. Tim Jenison explains what's happened: "For one thing, the sheer volume of video production has exploded. Audiences now expect high production values from the lowliest sources. There's now far, far more bad television programming to choose from!"

Graham Sharp continues: "Nowadays, TV productions are a lot more complicated. Even a relatively cheap show has cuts every two or three seconds. To get that kind of style right on a linear system would have taken far too long, and cost far too much. Titles and effects can now be applied much more liberally."

News too has become more immediate. We now expect to see events as they happen and we expect them to be provided with analysis and context. "Correspondents record on DV cameras, edit on their laptops, and upload their reports straight to the broadcaster, so the audience feels more connected with events," says Graham.

It's all very well having the software and hardware to create digital films, but it's only in the last few years that the final piece of the desktop puzzle has fallen into place.

DESKTOP VIDEO TIMELINE

1980

Sony introduces the first consumer camcorder. The announcement is a little premature since the device won't go on sale for another five years.

1982

Tron – the first movie to feature computer graphics heavily – is launched. The plot isn't up to much, but the sleek, simple lines of the graphical sequences stun audiences with 3D animation for the first time.

1985

The Amiga is launched. While PCs are mostly still black-and-white, the Amiga is capable of full-colour hi-resolution graphics, and although it's primarily a games machine, it creates a hardware platform for the graphics industry as we know it.

1989

Avid launches the media creator for the Mac II at the Siggraph exhibition. It's a dedicated offline edit suite which quickly becomes an industry standard. Meanwhile, on another stall at the same exhibition, Newtek launches the Video Toaster on the Amiga. The Toaster includes an editor and effects tools in one box.

1992

QuickTime is introduced, enabling much more effective compression of video files than before. Video functionality for Windows follows just a few months later.

1995

A TV programme is broadcast over the Internet for the very first time. *Computer Chronicles* is, predictably enough, a television programme about computers.

1995

MPEG is introduced, offering online quality for the first time, but you have to have a fast hard drive and an expensive video card to make it work effectively.

1996

DV format appears for the first time. FireWire cards are expensive as are DV camcorders, but the format is in place so it's now possible to record and edit high-quality video without quality loss.

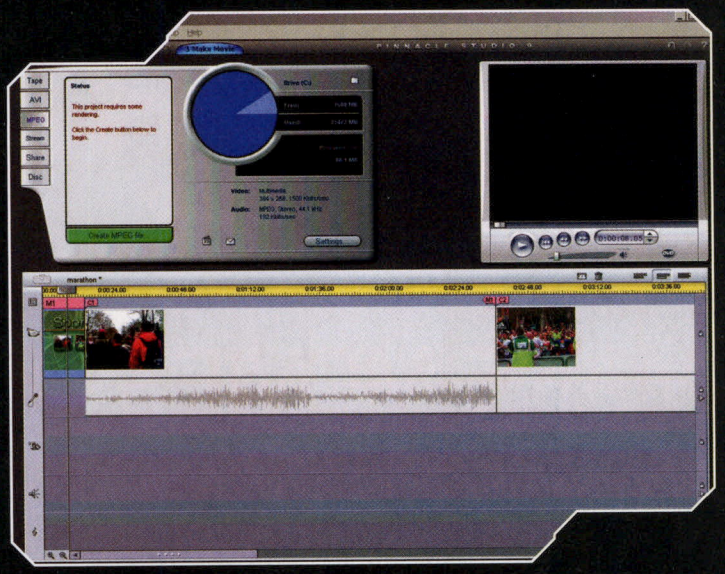
1997

Streaming Internet video in several formats including VDOlive and Realmedia is introduced, opening the way for low-cost live video online.

1997

DVD is introduced. It will take a while to gain momentum because most users are still wedded to VHS. Players cost in the low hundreds of pounds, but recorders cost thousands.

Giving it away. *Avid Free DV* can be downloaded and used for nothing. It contains many of the high-quality cutting tools that have made Avid so popular.



Pinnacle Studio is one of many video-editing applications aimed at home users – bringing some excellent and easy-to-use tools to novice filmmakers.

Broadband and DVD authoring have combined to give independent video producers access to an audience. "Once television begins to be viewed over the Internet, everything changes. Democratisation of the medium will finally be possible," comments Tim Jenison.

When Broadband and increased compression tools made Internet video a real possibility, the first to get on board were the news organisations. Today, the BBC netcasts live press conferences and other events, and presents bulletins and other story items every day.

New audiences

Filmmakers are getting onto the bandwagon almost as fast, with sites such as Atom Films screening short films and animations to a global audience. This is sure to grow as TVs, set-top boxes and computers move closer together. If your project is destined for a more specific audience, the fact that you can burn video at high quality to DVD (or to CD in DVD format) which can be played in a standard DVD player means that desktop video can now leave the desktop and be delivered on television more easily and quickly.

So whether you're producing video for a global audience or just for a few targeted people, and whether you're creating news, movies, or corporate presentations – desktop video has never been easier to create, provided higher quality, or been cheaper to produce than it is right now. **ca>p**

1997
An average PC has enough storage space for roughly ten minutes of digital video.

1999
The Blair Witch Project is made by film students at a cost of $35,000. Following promotion on the Internet, it pulls in over $140 million.

1999
Walking with Dinosaurs brings film-quality effects to a documentary series for the first time. From now on, effects are not just the preserve of fiction – they're cheap enough to be used in all kinds of programming.

2000
An average PC has enough storage space for an hour-and-a-half of digital video.

2002
High-end desktop systems now have enough processing power to make real-time video effects, graphics overlays and transitions a realistic possibility without additional hardware. Not having to pre-render every effect before you can watch it back has been the aim of non-linear editors for many years.

2002
Star Wars Episode II: Attack of the Clones is produced entirely on digital format. There's not an inch of celluloid in the whole movie. The quality of the film is debated, but the quality of its images is not. This film lays to rest once and for all the issues of quality which have dogged non-linear editing.

2002
Broadband rollout in the UK gathers pace. With faster Net connections, it's possible to download and upload whole movies. This means that low-budget moviemakers can share their work globally, but also means that many high-budget Hollywood titles are available illegally online before they even hit cinemas.

2003
DVD authoring becomes available, affordable and technically possible for the average computer user.

2004
G3 phones combine higher bandwidth with video camera technology. Digital video expands into phones, enabling video to be sent and received from a mobile.

2004
An average PC has enough hard disk space for 4.5 hours of digital video.

TUTORIAL INDEX

MAKE MOVIES ON YOUR DESKTOP

YOUR QUICK REFERENCE GUIDE TO THIS MONTH'S FILMMAKING TUTORIALS...

P18: STORYBOARDING AND PRE-VIS WORK

Plan your shots and create fantastic pre-vis work with this expert tutorial. Be sure to read the feature as well, starting on page 14.

P48: COMPOSITING

Take a person or an object and put them in a completely different place. We show you how to composite like the pros in *After Effects* in this advanced tutorial.

P30: EDITING YOUR DV FOOTAGE

Learn how to cut your footage like the professionals with this in-depth *Avid Free DV* tutorial. You'll find the software free on your cover disc!

P60: CREATE TITLES THAT WORK

Using *After Effects*, you can create stunning 3D titles that will set the scene for your short film. Here's how to do it.

P36: LAYING DOWN THE SOUND

Using your audio tool, create all the extra sound effects you need and make a stunning royalty-free soundtrack for your movie.

P66: OUTPUT YOUR FINISHED MOVIE

Once you have your finished movie, output it to all manner of formats, including the Web and DVD, with this expert tutorial.

P42: VISUAL FX

After Effects can simulate the look of film, as well as replicate traditional (and expensive) lens filters and add other stunning visual effects. Here's how to do it...

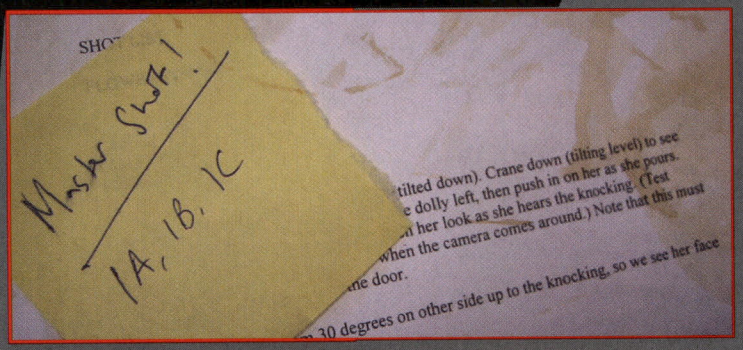
P74: PROFESSIONAL DVD AUTHORING

Using budget tools, you can make a superb DVD of your finished short film to get yourself noticed. Here's exactly how to do it!

FLOWER POWER

YOU'LL FIND THIS EXCLUSIVE SHORT FILM ON YOUR COVER DISC...

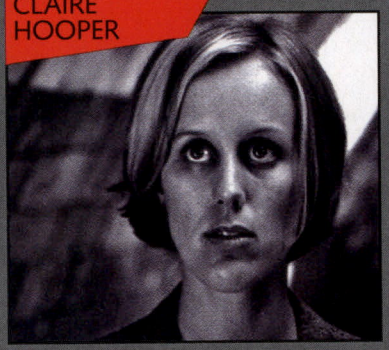
Flower Power is sci-fi short with a comedy twist. Brought to you by filmmaker and novelist Chris Kenworthy, it tells the tale of a female mad scientist experimenting with journeys to different dimensions. We'll leave the rest for you to find out for yourself – make sure you check it out on your cover CD in Software/Tutorials/Tutorial files/Tutorial files/All/The film folder. You'll also find the shot list and script, to get an idea of how to go about creating your own movie from scratch.


Master Shot!
1A, 1B, 1C
tilted down). Crane down (tilting level) to see
e dolly left, then push in on her as she pours.
her look as she hears the knocking. (Test
when the camera comes around.) Note that this must
ne door.
30 degrees on other side up to the knocking, so we see her face

THE ACTORS

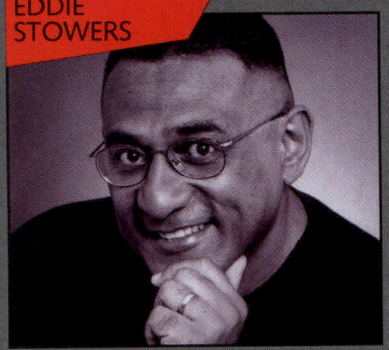
MEET THE STARS OF FLOWER POWER

CLAIRE HOOPER



Claire Hooper is a professional actor, comedian, writer and director in Perth, Australia. She was recently a National finalist in Triple J Raw Comedy (an Australian stand-up comedy competition). Later this year she is due to direct Hamlet for the Perth Theatre Company from a script she has edited herself.

EDDIE STOWERS



Eddie Stowers is a NZ-born Samoan, living in Perth, Western Australia. Originally a rugby-playing anthropologist, he now prefers being on stage, doing everything from the classics to improvised comedy.

Vaiban

Storyboard and pre-vis techniques

Imagine your shots long before you start shooting, with the help of your desktop computer...

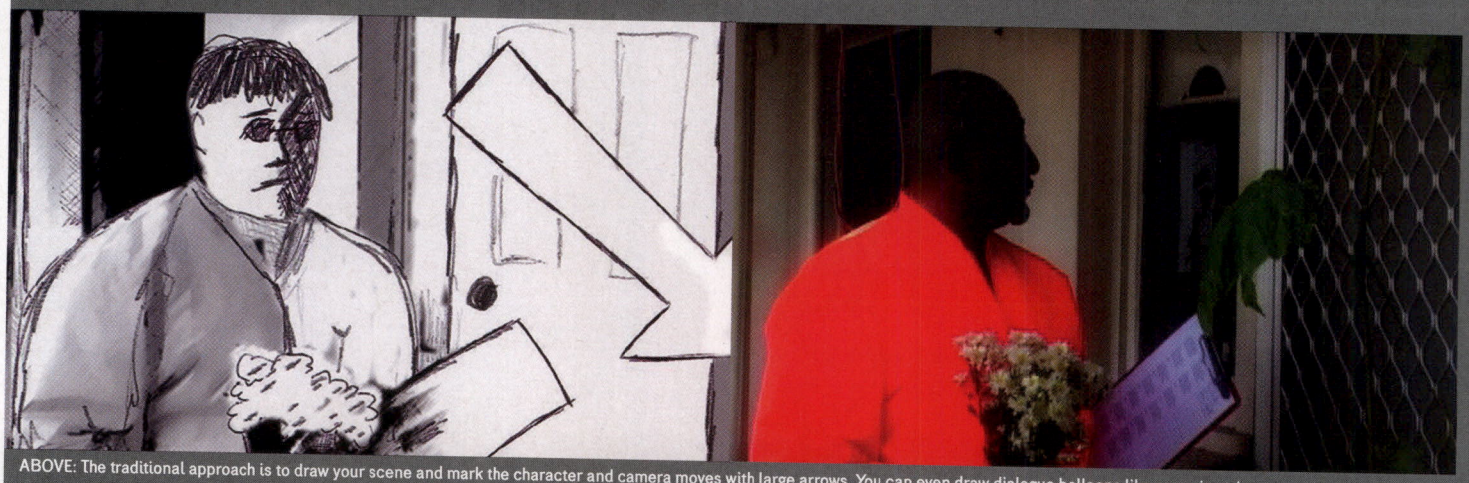
A good storyboard enables you to see your film before you shoot, giving you more time to make creative decisions and invent new shots. It also helps you plan a shot list, so that you get all the angles you need. If you can't draw, there are many ways to pre-visualise your film without ever picking up a pencil.

Professionally drawn storyboards are almost like works of art, but the most important thing they need to show is where the characters move within a scene, and how the camera moves. In the samples on the next page, red arrows are used to show character movement, and blue arrows show camera moves. Whatever method you choose, the storyboard should be clear enough for you to scan through a whole sequence and almost get the impression that you're watching the film.

Storyboarding software

The most popular software is *StoryBoard Quick* (see **[w]** www.storyboardartist.com). It provides a number of pre-drawn characters, props and locations that can be dragged into position, frame after frame. This results in a non-animated storyboard, which is fine for simple shots. More common these days is pre-vis, which involves the creation of a moving storyboard, or animatic. Animatics can include >

All the components needed to complete this tutorial can be found on the cover CD in the Software\Tutorials\Tutorial files\Tutorial Files\All\Storyboard folder.



ABOVE: The traditional approach is to draw your scene and mark the character and camera moves with large arrows. You can even draw dialogue balloons like a comic strip.

ABOVE: 3D software, such as *Vue Pro 4.0*, enables you to see how a camera move will look, in turn reducing the number of shots you need to take.

"3D PRE-VIS WAS ONCE RESERVED FOR HOLLYWOOD SPECIALISTS, BUT IT'S NOW EASY WITH SOFTWARE SUCH AS *VUE PRO*. INDEED, IT'S NECESSARY FOR SHOTS THAT INVOLVE A LOT OF CAMERA MOVEMENT"

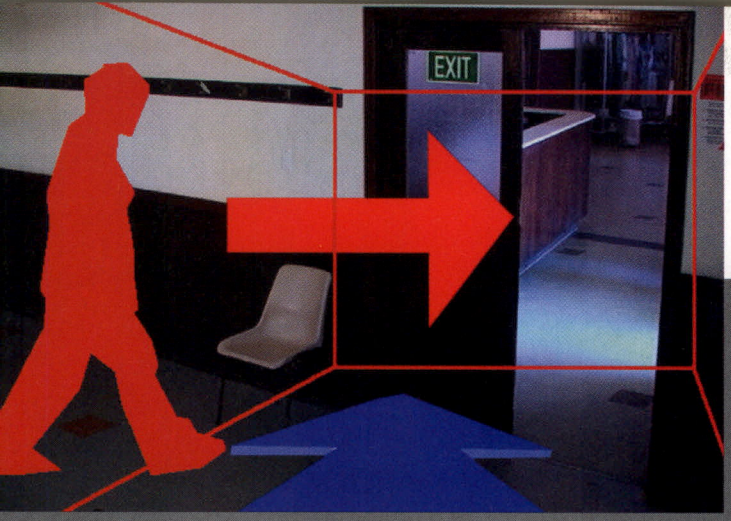
CG characters, puppets, animated images and sound. One of the best solutions is to import 2D images of characters and locations into your editing software and create simple animations.

Another technique is to take an assistant or two to the location of your shoot and use them as stand-ins while you test the camera moves. This is far better than trying to think up shots when actors and crew are waiting for your decisions. You can even edit this basic sequence to see how it looks, before your main shoot.

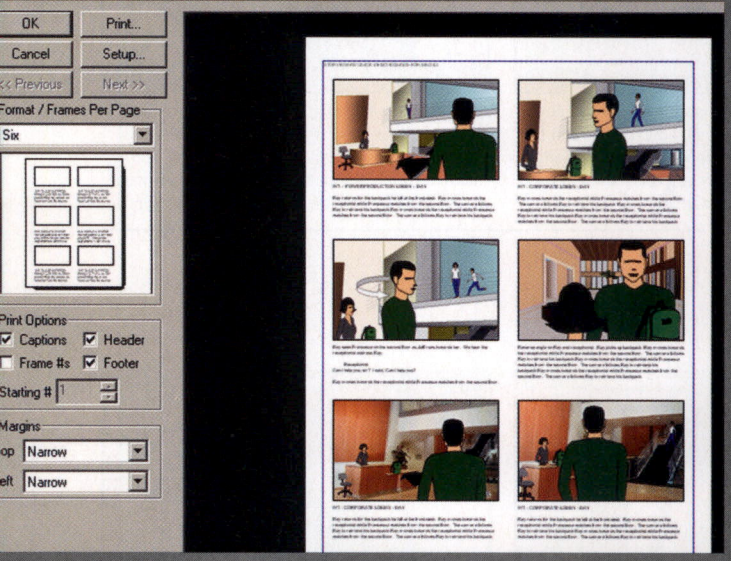
3D pre-vis was once reserved for Hollywood specialists, but it's now easy with software such as *Vue Pro*. Indeed, it's necessary for shots that involve a lot of camera movement or a complex rearrangement of actors. If you're uncertain how a shot will look, or what exactly will be in frame during a camera move, use 3D pre-vis to check the results. The software is so easy to use that you can load characters into 3D space, animate their movements, and then experiment with different camera moves until you find one you like.

Once your storyboard is complete, you should create a shot list so you won't miss anything when you come to shoot. Each time you shoot a new camera angle, it's considered a new shot, so if Scene Two has four shots, they will be called 2A, 2B, 2C and 2D. An accurate shot list saves you hours of shooting time, and it's one of the main reasons why you create a storyboard in the first place.

Remember that some of the best shots are invented on set. In *Flower Power*, the complex swing-around shot was changed on set, so the camera bursts through a cloud of smoke. Because the initial shot was planned accurately, it left time free on set to experiment with new ideas. Although storyboarding may seem slightly mechanical, it's the best way to unleash your imagination.



ABOVE: Simple graphics animated over scanned images give you a basic moving output called an animatic, and this technique is becoming more popular than drawings.



ABOVE: *Storyboard Quick* is a drag-and-drop method for creating storyboards.

BELOW: Sometimes you can rehearse scenes on location, or in a similar-looking place, to test camera moves and block the actor's movements.

Scripts

You can't shoot a blank page, as they say, so your first job is to write a script...

When writing, concentrate on the story and images, and forget about camera angles unless they're completely vital to the story. Work on storyboards and shots once everything else is finished.

The most common problem with films is that the characters don't have a strong enough desire, something that motivates their every move, so try to find a story that keeps your characters engaged. Avoid putting in too many directions for the actors, or lengthy descriptions.

You can write your script in *Word*, using Script Templates available free from **[w]** www.dependentfilms.net. For the more serious writer, the industry standard is *Final Draft*, which automatically formats as you type and saves many hours on feature-length scripts. *Screenwriter* has a cult following, and is also widely used in the industry.

Using an NLE

Non-artists can create storyboards using non-linear editing software...

If you can't draw, you can still storyboard. Assemble images in your non-linear editing software or, better still, *After Effects*, and you can generate a real-time storyboard using photographs. This helps you check the pacing of your movie and enables you to make sure you're planning for all the footage you need.

Shoot footage of locations you'll use, and import the best shots into *After Effects* as stills. Otherwise, scan photographs of walls, doors, tables and people, which can be used to stage your scenes.

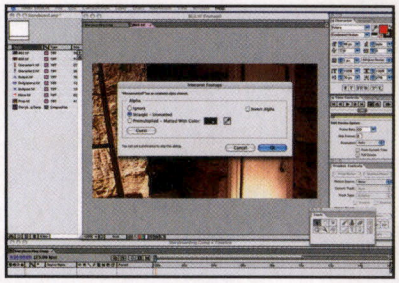
When you assemble these images you can add arrows, implying character and camera movements. You can also animate the characters and backgrounds to simulate camera moves. You can even record dialogue to test how well it matches the shots. Animatics tend to look slightly comical, but with some imagination they give you a low-budget way of completely pre-visualising your film.

Part 1: The tools

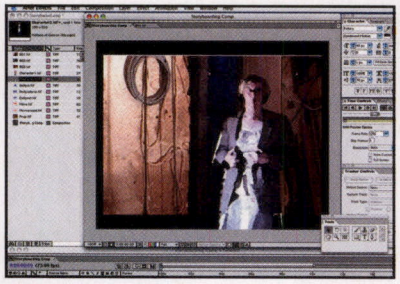
Use imported images to build virtual movie sets and place your characters in an imaginary world...

Edit points

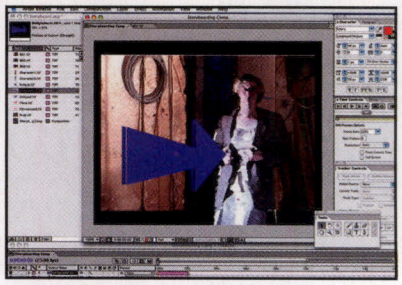
The sample Animatic.mov on your cover disc doesn't exactly match the cuts in the final movie. When editing, you'll find ways to make cuts that change meaning, pace and keep characterisation clear. Most of these decisions can't be made until you have your footage on tape. When storyboarding, don't try to guess all the edit points, but use it to make sure the story could be told with the footage you plan to obtain.



1 Create a new project in *After Effects* and import the files from the Boardtools folder on your CD. The software asks how you want the images imported, so choose Straight-Unmatted for all, so their background remains transparent.



2 Go to Preferences>Import, set Still Footage to 02:00, and drag BG1.tif and Character2.tif to the timeline. Each will be about two-seconds long. Position the images to represent the starting point of the shot you're trying to create.



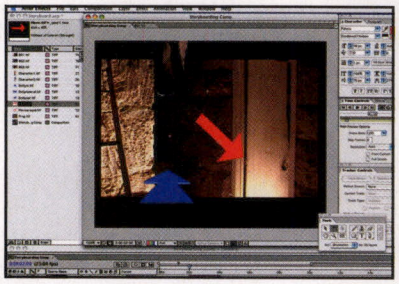
3 Drag Dollylateral.tif to the timeline. The blue arrow indicates camera moves, so this shows that the camera will move from left to right. You could also duplicate the layers and move the images around to show how the shot will look at the end.

Part 2: Animation

With a few clicks, you can see how your shots will flow...

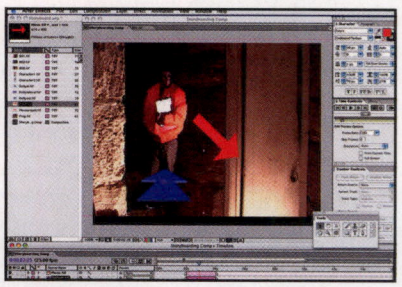
Overhead plan

No matter how well you plan in advance, there are often changes on set, such as unexpected shadows or lights, which mean you have to rethink. Take a moment to re-plan the shot – on paper if possible – but rather than drawing a full storyboard, draw an overhead map showing where the actors will go and how the camera will follow them. This brief planning takes less than a minute, but helps everybody to catch up when changes are made.



1 Create another scene with BG3.tif and place Character1.tif at the top of the stairs. Dollyin.tif shows the camera move, and Move.tif shows where the actor will go. Select the character, press S and click the keyframe clock, then press P and click the position keyframe clock.

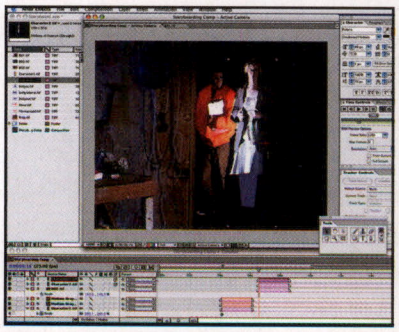
2 Use the Rotate tool to change the angle of the arrow. Then move to the end of the clip and drag the character down and to the right until he's positioned by the door. Press S for the character and the background, and increase the scale by 30 per cent to simulate the dolly move.



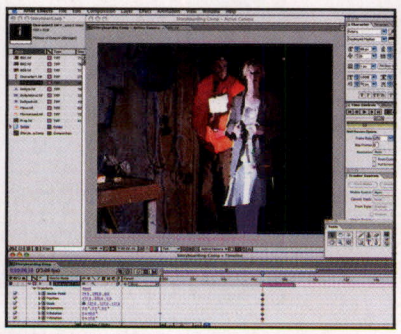
3 When you play back the clip, you may find that the character slips down the screen rather than following the stairs. If you want to refine the look, move halfway through the clip and reposition him in the correct place.

Part 3: 3D touch

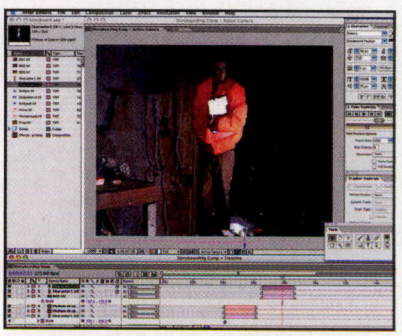
A touch of 3D enables you to see just how an action sequence might look...



1 Drag BG2.tif and both characters to the timeline, and click the cube icon to make each layer 3D. By using the Rotate tool, and dragging on the coloured arrows in the centre of the screen, you can rotate each layer in 3D space.



2 At the beginning of the clip, click on the keyframe clock for Scale, Position and Orientation for all layers. You can access the Orientation tools by expanding the triangle next to the left of the clip name in the timeline. Move half-a-second into the clip.



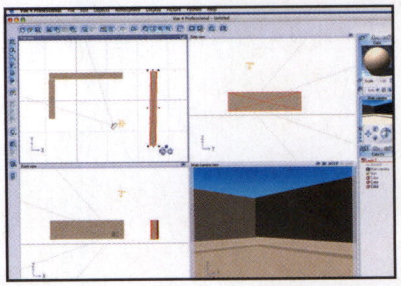
3 Use the Rotate tool to flip Character2.tif towards the ground, as though she has been knocked over. Also use the Arrow tool to lower her in the frame, or she appears to flip in the air. Play through the entire sequence to check the pacing and logic of the shots.

Part 4: Pre-vis

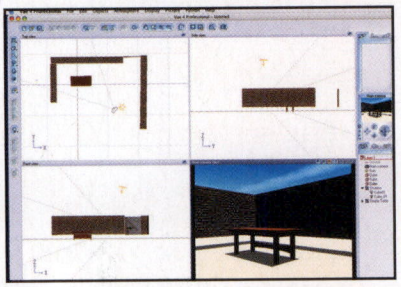
Use 3D software to find out how well your complex shots are going to work...

Re-timing

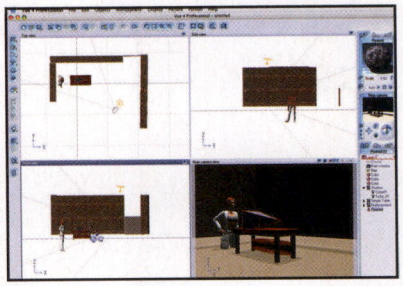
Once you've created an animatic, you can begin to adjust the length of the various clips to check pacing. This works best if you over-dub the dialogue into the scene — no matter how badly acted. Although you shouldn't try to make a full edit of the movie, this helps you to see if a planned shot is too slow or too fast.



1 Launch *Vue Pro 4.0* and choose Daytime> Airshow. Click and hold the sphere icon on the top left, then select the cube. Drag the handles to resize the cube into a wall shape. Duplicate the wall three times to create a basic room outline.



2 Select all three walls, then click the Load Material button on the top right, and choose Rocks>Brick Wall. Using the Load Object button, import Outside>Shutters and Simple Table. Position the shutters in the gap between the walls.



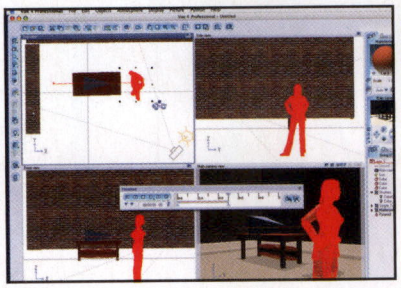
3 This basic movie set can be used for many test shots. For this sequence, choose Load Object, and select Marlenestand. Lower her into the floor, as though she's kneeling.

Part 5: Add motion

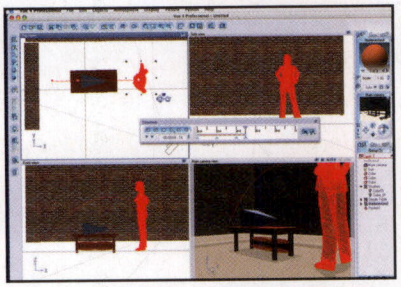
Simple animation of characters and camera gives you a feel for your shot...

3D flying

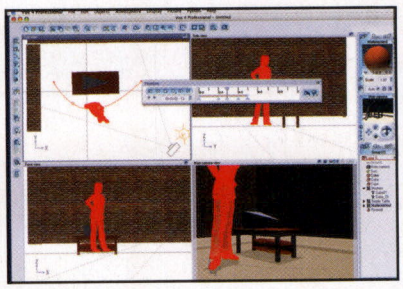
With 3D pre-vis software you can plan elaborate camera moves from one room to the next, swooping under a table, up to the ceiling and all around the character. This is an excellent way to test the shots, but always bear in mind how you'll actually move the camera. If it's handheld, can you reach that high, or get under the table? If you're using a dolly or jib arm, can you move it through doors?



1 Click on Display Timeline at the top of the interface, and close the Mover Wizard that appears. Drag the arrow five seconds into the timeline, then drag your character to the other end of the table.



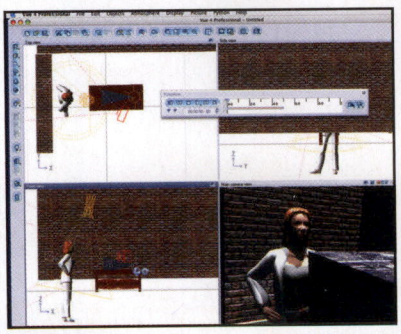
2 Go back to the one-second point and drag the character up to floor level so that she appears to stand at the beginning of the shot. About one second from the end, turn her slightly towards the table. Then go to the end of the clip and turn her completely towards the table.



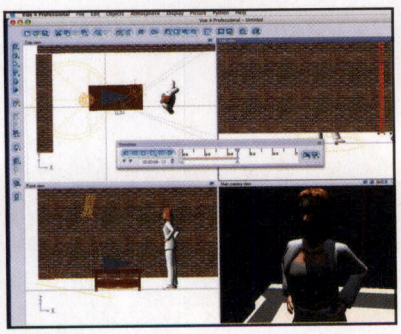
3 The character now appears to get up and turn as she reaches the end of the table, but she's still walking through the table itself. Go to the middle of the clip and drag her away from the table. Her animation is now complete.

Part 6: Camera move

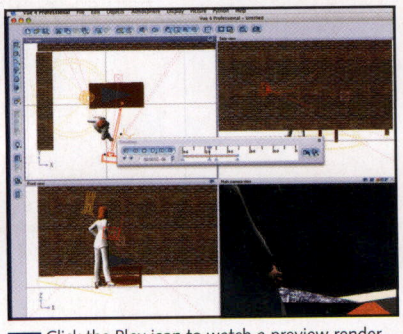
The complete shot involves an animated camera swing, which can be tested almost instantly...



1 Go to the beginning of the clip and click on the main camera. Use the controls to position the camera over the table for the first shot. The character should be almost central in the frame.



2 Go to the end of the clip and position the camera over the table, but pointing the other way. You can also move a second forward and shift the camera closer to the character to simulate a 'push in' after the main move.



3 Click the Play icon to watch a preview render. You may need to stop halfway through the clip and drag the camera out beyond the character to prevent them colliding mid-shot. When complete, the camera swings around the character as she moves from one end of the room to the other. ca-p

BLEACH BYPASS
PUSH IN / PULL
BOOM SHOT /
HELD / THE RU
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E APERTURE.

50 FILMING TIPS

Master the art of shooting your movie with these essential tips for composition, lighting, production, camera techniques and more...

GETTING THE RIGHT SHOTS

1. PUSH IN

You can push in towards your main character to show a moment of realisation, drama or shock, or just to speed up the pace of a scene. Always move the camera, rather than zooming, or the result looks like a lens effect.

2. PULL FOCUS

Direct attention within the frame by changing the focus from the foreground to background. Switch off the auto-focus, zoom out to a 'long lens', then position the camera. Focus on the foreground, start shooting, and shift the focus to the background. Pull focus works best when there's also some movement in the shot to help shift attention.

3. TWO SHOT

Filmed conversations between two parties can lead to clichéd results, cutting from one over-the-shoulder shot to the next. Such cuts can be distracting for the viewer, so find interesting ways to keep both characters in the same frame at once. You can do this by sitting your actors on different levels, so that both of their faces are shown at once.

4. CONNECTING SHOTS

A connecting shot shows everybody and everything in the scene at once. Although a master shot often achieves this, you may need to use a connecting shot when somebody else enters the scene. Without a connecting shot to introduce the new character into the scene, their entrance might feel like a cut to another, completely different scene.

5. TILT

When the camera points up or down, it is tilting. You get the best look with a tilt when it's combined with another camera move, such as a crane or dolly (see below), or when following a moving object.

6. DUTCH ANGLE

With a Dutch angle you tilt the camera to the left or right, to create a sense of confusion. Dutch angles are much-loved in drunken scenes or dream sequences. A modern variant is to move from a standard angle to a Dutch angle during the shot.

7. CRANE SHOT

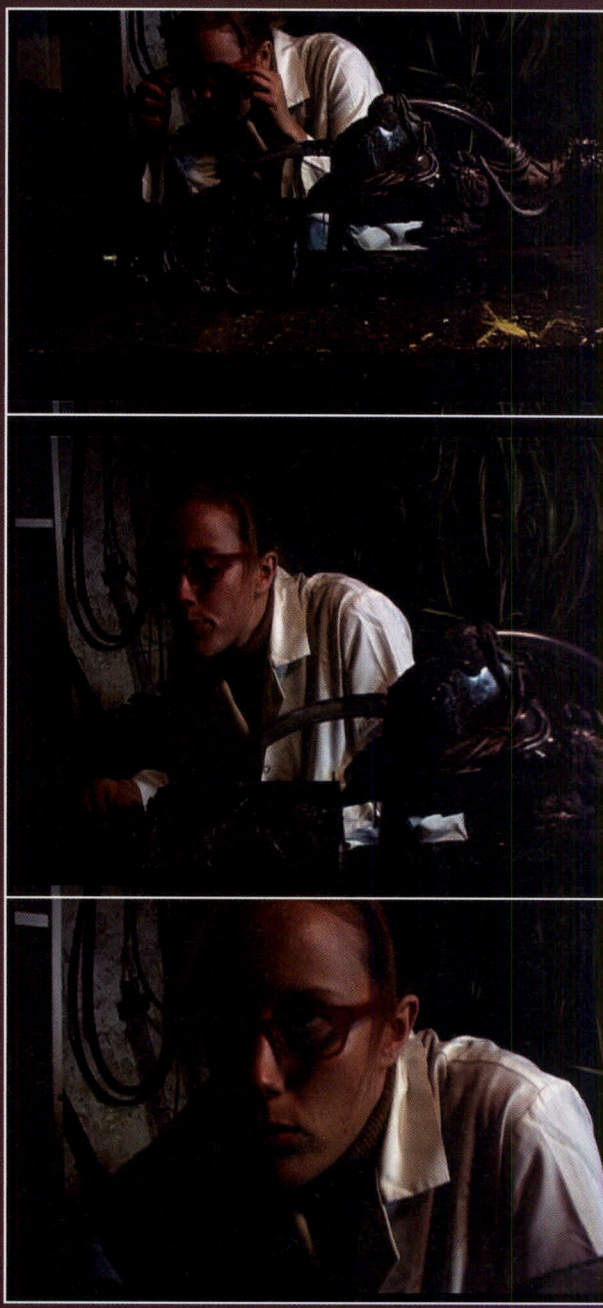
A crane shot means the camera moves up or down, while remaining level. Although actual cranes can be used to move the camera up and down, many crane shots can be achieved perfectly with a handheld camera.

8. PAN

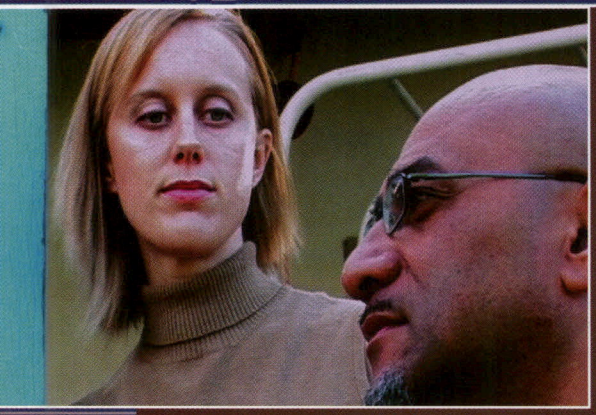
Panning is when the camera is fixed in one place, such as on the top of a tripod, and is turned to follow an actor. The pan works well over short distances, when moving from one face to another, for instance. For large movements, such as walking, pans are less common than they used to be; directors prefer boom shots or dollies.

9. BOOM SHOT

A jib-arm or crane can be hired to move the camera around in space. The resulting shots are known as boom shots, and many films are shot almost entirely on a jib. You can replicate the effect with a handheld camera by holding it at arm's length and swinging your arm to follow a moving object. The movement is less harsh than a pan.



When you 'push in' towards a character or object, the movement creates a sense of drama and focus.



Keep both actors' faces in shot during a conversation by putting them on different levels.

When cutting between shots of the same action, always move the camera at least 30 degrees from the first position.

The closer the camera is to looking into the actor's eyes, the more intimate the viewer feels with the character.

10. ARC SHOT

An arc shot is achieved by circling the camera around your actor. This is easy to perfect with a handheld shot, over a quarter circle distance, because you can just move your hands without stepping. If you need to move further around a character, you'll need to step past them, and this takes practice.

11. DOLLY SHOTS

You can move the camera without an expensive track-dolly by using a wheelchair and holding the camera. This is better than strapping the camera to the wheelchair, because there's less vibration. You can dolly across a scene, following actors as they walk, which is an unnoticed camera movement. Or you can dolly backwards and forwards, which draws attention to the camera movement.

12. DRAMATIC ANGLE

Whenever you place the camera immediately above or below a character and tilt towards them, you create a dramatic angle. Don't use these shots randomly in a scene; they should be used only when you want to heighten the tension or drama.

13. DISCOVERY SHOT

A discovery shot reveals something new, which wasn't in frame when the shot began. Start with a shot of a shop window, then as a character walks in front, the camera begins to follow the actor. Or follow an actor, then as they walk out of shot, the camera is left pointing at a mysterious suitcase on the pavement. Some directors begin or end almost every scene with a discovery shot.

14. POINT OF VIEW

The POV shot, usually handheld, is meant to show what the character actually sees. This is why you need to show a close-up of the actor peering into space on one side of the POV shot. The POV shot can feel voyeuristic, so use it with caution.

15. EXTREME CLOSE-UP

Even without a special lens you can get extremely close to a character or object, but be careful of casting shadows with the camera. Extreme close-ups are a way of focusing on the detail of the eyes, mouth, or any small object.

STYLE AND COMPOSITION

16. HANDHELD

A handheld camera provides an edgy look, and enables you to move the camera without complex dollies and cranes. Handheld works best when zoomed out to a wide lens, getting close to your subject.

17. SHOOT IT UP

A two-and-a-half minute film will probably need about 45 minutes of good takes to give you all the material you need to edit. Make sure you shoot enough, but once you're happy with a take, end it and move on. Don't be tempted to keep shooting over and over just because DV tape is cheap. The time will soon fly by and your actors and crew will tire.

18. CUT-AWAYS

Brief, close-up shots of random objects and movements are a godsend when editing. Even in major feature films, you'll often see a brief shot of sugar being poured into coffee, for instance, which serves no purpose other than to cover a difficult edit. Make sure you film enough of these shots when you're on set.

19. NIGHT VISION

If you're shooting footage after dark, even indoors, you'll find that your eyes adjust to the dark, and images in the camera viewfinder appear brighter than they actually are. It's easy to think that you're getting good exposure, even when you're not. To avoid under-exposure on important shots at the end of a long day, open the camera iris as wide as you can without flaring out any of the bright spots.

20. THE RULE OF THIRDS

You can create a dramatic effect by placing your character dead centre in the screen, but usually you offset them to one side. Imagine lines dividing your image into thirds, horizontally and vertically. Important elements, such as eyes are placed on the imaginary line marking the top third of the screen, and either the left or right third of the frame. Once you've got the hang of the rule of thirds, you can have fun breaking it.

21. RIGHT-HANDED
When composing your shots, note that in the Western world people scan the screen from left to right, just as though they were reading. So people on the right of the screen are given more attention as that's where the viewer's eyes rest naturally, while people or objects on the left feel more distant.

22. DEPTH OF FIELD
If you're using a long (zoomed in) lens, and want the background to be more in focus, try closing the aperture to F11. If you're using a wider (zoomed out) lens, and want the background to be hidden in blur, close the aperture as much as you can.

LIGHTING OPTIONS

23. EYE-LIGHTS
When setting up your lights for a shoot, try to position one lamp so that it shows up as a sparkle in the actor's eye. This helps the audience to see the character's eyes, and read their expressions and emotions. Quite dim lights will show up in the eyes without affecting your overall lighting set-up.

24. KICKERS
A 'kicker' is a light placed behind the actor, slightly off to one side. This adds a glowing rim of light to the scene, something you'll see in nearly every shot of a Hollywood movie. Although this effect is unrealistic, it helps to distance a character and give them definition against the background, as well as giving an attractive result.

25. MIXED LIGHT
To the camera, daylight appears blue, and tungsten light (normal room light) comes out as yellow. You should always aim your camera at a white piece of card before you shoot, pressing the White Balance button. And you need to be careful when daylight and artificial light mix. If daylight is correct, tungsten will be over-yellow, and if the tungsten looks correct, the daylight will look too blue.

26. SOFT LIGHTING
If you want to soften the light from a lamp, the best advice is to use baking paper, which is more fireproof than tissue or tracing paper. However, it can still burn, so keep it well away from the heat of the lamp. Softened light is good for filling facial shadows caused by the 'key' light (explained below).

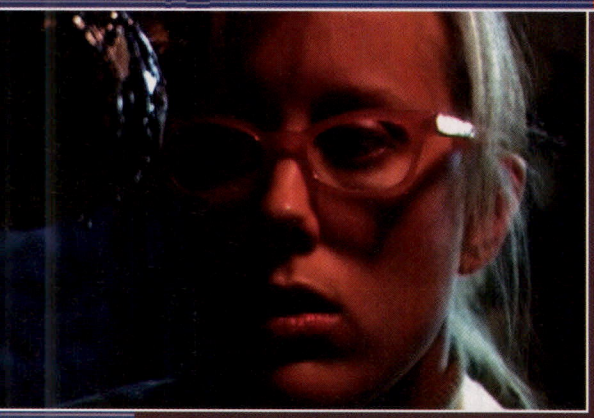
27. KEY LIGHTING
The 'key' light, which is the brightest lamp used for a scene, should come from the side of the actors. The key should make the actor's face bright on one side and dark on the other. Use a slightly dimmer, soft light (using oven paper or a reflector), positioned to one side of the camera, to fill in those facial shadows. Crossing shadows is a common error made by many novice photographers and filmmakers, where the key and fill are poorly matched, leading to noticeable shading.

28. HIGH LIGHTS
One of the reasons you light a scene is to separate the actors from the background. To keep the background dimmer, put your lamps high up and pointing down onto your actors, so they light the people without putting shadows and light on the walls.

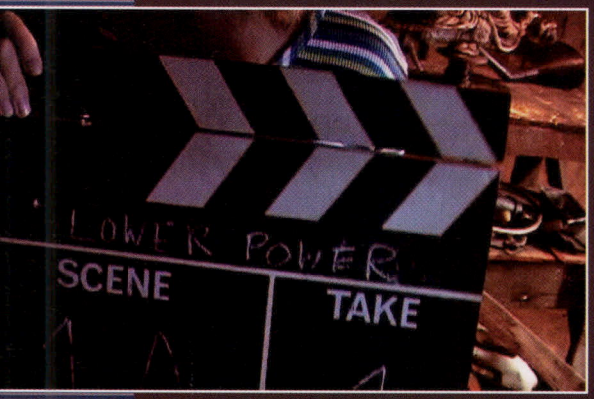
29. REFLECTORS
Whether you're shooting indoors or outdoors, you can sometimes create the best lighting effect with nothing more than a large piece of white cardboard. Held close to the actor, this gives a beautiful, soft light without shadows. Painted ply board or polystyrene tiles can also recreate the same effect. Similar 'fill' effects can be achieved by using 'flags' or gogos', which are panels that shade part of a subject, or three-winged triflectors that wrap light around a subject and are particularly flattering for facial shots.

30. SMOKE LIGHT
Smoke from a party-hire smoke machine can be used to create clouds of steam, or to fill a room with diffused light. When you light the smoke from the camera-side, the smoke becomes opaque. If you put your lights behind the smoke, it becomes translucent. Diffused smoke makes light rays from windows look solid, giving depth to a scene.

Carefully positioned lamps add a sparkle to the actor's face, but also help the audience to read expressions and emotions.



Choose your lens carefully. A long lens minimises the amount of visible background and shifts it out of focus.



The clapperboard takes just a couple of moments to set up, but makes everything so much easier.

A 'kicker' is a light placed behind the actor, to one side. It helps to separate them from the background.

31. DARKNESS

When shooting scenes set at night, whether indoors or out, don't make the mistake of shooting in near-dark, or your footage will be grainy. Watch feature films, and see that night shoots are always brightly lit. Dark patches, and lots of contrast, make it clear that it's night, but there is always bright light.

32. CANDLE LIGHT

To simulate candle light or fire light, use real fire to set up your lighting but add more light or your footage will be dark and grainy. A lamp with a coloured gel will give you the necessary brightness, and you can make it flicker by twirling strips of paper in front of the lamp.

CAMERA TECHNIQUES

33. CUTTING ANGLES

When you shoot a scene from several angles, make sure that there are at least 30 degrees between set-ups. If you cut two shots together from an angle closer than 30 degrees, it will look like a jump cut. Jump cuts are fine if you want to draw attention to the cut, but for the scene to flow, you need to move your camera further around the subject.

34. EYE-LINES

Shoot an actor in profile, and the character feels slightly distanced. Shoot the same actor from directly ahead, almost looking into camera, and the feeling is intimate. Somewhere in-between feels personal, without being too direct, and is best for dialogue. When shooting dialogue, keep the eye-lines identical for each character, or they appear to be talking into thin air.

35. LENS CHOICE

A fully zoomed out 'wide' lens makes the background recede from your character. A zoomed in 'long' lens pulls the background closer. Wide lenses establish a character in a space. Long lenses focus attention on the character. Choose the appropriate lens for your shot, and then move the camera to compose the shot. Never zoom in to 're-size' the actor because lens choice then becomes arbitrary.

PRODUCTION PROTOCOL

36. CLAPPERBOARD

The clapper is used on professional movies to help with sound sync, but that isn't necessary when recording sound in your DV cam. But a clapperboard enables you to let the actors and everybody else know that the shot is about to begin. Also, the shot and take numbers make editing much quicker and easier.

37. BOOM SHADOW

If you're using a microphone on a boom (or on a broom handle), always check to make sure the boom shadow is out of shot. Don't assume you'll notice it, because it may only show up when editing. Always make a conscious effort to check where the boom shadow is, and make sure it's never in frame.

38. ACTION

It's important to call 'action' and 'cut'. Your actors should keep acting until you call 'cut', and you'll get some of your best material when the planned scene is over.

39. RUSHES

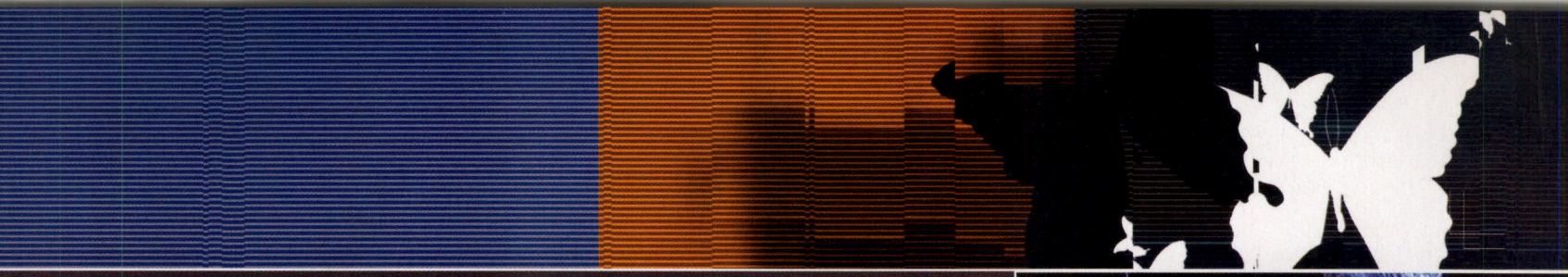
It's tempting to watch through your footage as you shoot, to see how each shot turned out. This is okay from time to time, but you can easily double shoot-time in this way. The actors may also want to take regularly looks at their performances, but this rarely offers any benefits, because unedited, unprocessed footage in a tiny viewfinder doesn't do justice to their work.

40. BLINKING

Actors know that on-screen blinking looks bad, and most will manage to keep their blinking to a minimum, but you should keep a lookout for it all the same. Although some blinking is permissible, too much makes an actor look nervous.

41. WIDESCREEN

Even if you want your film to be widescreen (16:9), shoot full frame (4:3). When you apply a widescreen matte, you can shift the image up or down in the frame. This gives you much more flexibility to perfect a shot in the editing room.



42. GAFFER TAPE
No product is more loved by film crews than black fabric gaffer tape. Used to secure wires, hang objects, attach gels to lamps, or keep doors closed – gaffer tape proves itself to be invaluable countless times on every film.

43. CHEAT
Sometimes you can't get the shot you want without moving the actors to a different position. In *Flower Power* (the short film created in this month's movie-making project), for instance, Claire landed right next to the bench. To shoot her on the floor, she was moved six feet forward. This 'cheat' works because there are no clues to show she's in the wrong place.

44. BLOCKING
When setting up your scene, rehearse the basic actor and camera movements to make sure that everything works in the way you had envisaged. No acting is required when 'blocking' these moves. This is better than shooting ten takes, with the actor working hard while you gradually perfect your camera move.

45. HITTING MARKS
When blocking your scene, you'll probably want to mark a few spots where the actor should pause, change direction or stop. Get a crew member to put a strip of tape on each of these marks. This makes it much easier for the actor to hit their mark without making it obvious that's what they're doing.

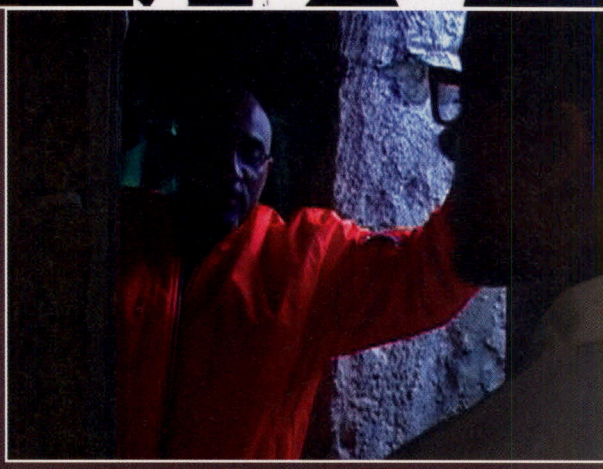
46. OPEN AND CLOSE
Don't begin a shot with the main action. Give yourself an easier time in the editing room by shooting a little bit of unnecessary action either side of the scene. If your scene shows somebody walking down a corridor, start the scene before they come through the door, and leave the camera running for a second after they go through the other door.

47. DON'T CROSS THE LINE
Experienced directors picture a line running across the set, and keep their camera set-ups on one side of this line. The line is drawn between the two main points of action – usually two people. If you cross the line with any camera angle, viewers become confused as to where they are in a room.

48. ESTABLISH SPACE
Traditionally, a wide establishment shot is used to show where the characters are, before cutting to close-ups. Inventive directors find ways to show the space without cutting. In our *Flower Power* movie, we start with a close-up, which moves to a wide shot, and then dollies in. This establishes the props, character and space without a cut.

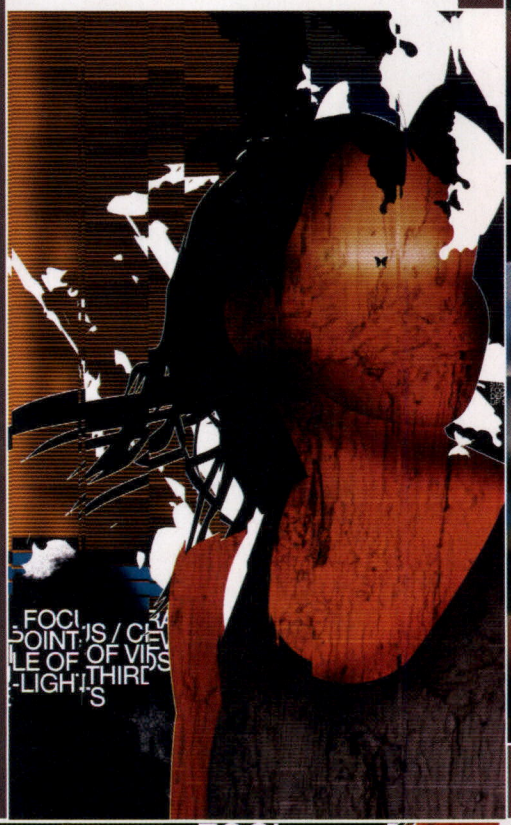
49. PRE-STRIPE
Before the start of a shoot, put each blank DV tape into your camera, press Record and let it run to the end of the tape, then rewind. This imprints timecode on the whole tape, preventing timecode breaks, which can make capture and editing difficult.

50. DIRECTING ACTORS
You have to learn how to get the best out of your actors. Telling them to be funny, sexy or frightened makes them look like they're acting. So instead of giving actors instructions such as 'be more intense' or 'bring it down', give them action verbs to get the right results. In our *Flower Power* project, Claire was asked to coax, tickle and pamper the gun. cap



When shooting dialogue, use connecting shots that include both characters at once, to show that they really are talking to each other.

Draw attention from the glasses to the actor by using pull focus. This changes the focus from foreground to background.



ANGLE 01
ANGLE 02
CUT FROM ANGLE 01. TRACK
AS SHE TURNS. TAKE 1.
ROLLING. SPEED.
MOVING FRO
ANGLE. PAN
CODE 1200
KING MOVEMENT.
CUT TO ANGLE 02
THE TAPES AND
THE RUSHES.

A-Z OF EDITING

You've filmed all your footage and you're keen to get it onto your computer for editing. We show you how to do this in our tutorial starting on page 30. First, here's some essential information to help you prepare for the edit ahead...

ADR
Automatic Dialogue Replacement is also known incorrectly as dubbing, and affectionately as looping. To replace the poor 'wild' sound shot on set, actors' original lines are looped in the studio. The actor listens with headphones and tries to replicate the exact intonation of the line, which is then mixed into the final film.

Angle reverse
Also known as 'shot, reverse shot', angle reverse is commonly used for shooting dialogue. You show two actors talking, often from over the shoulder of one actor, and then you switch to the reverse angle of the same shot. As long as the actors are reasonably consistent, this is easy to edit together.

Aspect ratio
This is the ratio between the width of an image and its height. A standard TV has an aspect ratio of 4:3, while a widescreen TV is 16:9. To confuse things, aspect ratio is often expressed in decimals, so 16:9 would be 1.178. To keep it simple, think in terms of square-screen and widescreen.

Batch capture
In high-end software such as *Final Cut Pro HD*, you don't capture one clip at a time but move through your tape logging clips. Once you've logged all the in and out points, you set the computer to 'batch capture' everything at once, then go and have a rest while it does the work. This is much faster than loading one clip at a time.

Broadcast legal
This is a loose term with no firm definition, but it's widely accepted that most TV companies have certain requirements for audio and video output. These don't refer to the sharpness of the image, but the various luminosity and audio levels. A file can be made broadcast legal by applying a filter that 'clips' the illegal levels down.

Capture
Capturing means to record video clips to the hard drive of your computer, for editing in NLE software.

Continuity editing
Continuity editing is the opposite of a jump cut, in that you see the action of the scene progress smoothly, in real time. When this is done well, the viewer shouldn't notice the cuts at all, only what's happening in the scene.

Contrast
Contrast is the difference between the bright and dark parts of an image. A high contrast image shows a large difference between light and dark. A low-contrast image has less of a difference between the darkest and brightest parts, so can tend to look flat and grey.

Coverage
When you shoot 'coverage', you shoot a wide master shot, several medium shots from different angles, and a few close-ups. With this much coverage you should have no problems editing the scene together. The best directors get good coverage from a minimal number of shots and takes.

Cross-cutting
This is when you cut back and forth between two different scenes, to show that they're happening at the same time. The sequence when Faramir attacks and Pippin sings in *Lord of the Rings: The Return of the King* is a legendary example of cross-cutting.

Cut
A cut is the most basic transition between two clips; one ends and the other begins.

Cutaway
When you cut to something in a shot that isn't the main action, this 'cutaway' is used to cover an otherwise difficult edit. It's frequently essential to use cutaways to prevent making a jump cut – that is, an abrupt cut between similar shots.

Dissolve
Dissolves occur when one scene fades into the next, and the effect usually implies that some time has passed. You can dissolve between scenes that take place in the same location, and the audience will know that time has passed.

Establishing shot
Until recently, establishing shots were used widely in film and TV to set the scene. You'd see an external, distant shot of the house or office, before seeing the characters inside. Now, unless it has dramatic value, the establishing shot is usually dispensed with, because it distances us from the characters and doesn't really tell us anything we need to know.

Fine cut
Also know as final cut (somewhat incorrectly), the fine cut is the point in production when all your editing decisions have been made and the film is ready for final output.

IEEE-1394
This is the techie name for what Apple calls FireWire and what Sony calls iLink, so be prepared to see all these names from time to time. IEEE-1394 cables can be used to load everything from DV to hi-def video footage into your computer.

Jump cut
A jump cut is a jarring switch between shots that are similar, but not quite the same. There are two main ways to create a jump cut. One is to cut between shots taken from only slightly different angles. The second is to shoot from one angle only, but to cut out chunks of time. Jump cuts were popular in French New Wave filmmaking.

Montage
Many brief clips are edited together, creating an impression of the scene that couldn't be achieved by showing the scene in full. Often used for dreams, murders and flashbacks.

NLE (Non Linear Editor)
In the bad old days, film and video were assembled in a linear fashion – you attached one strip of film, then the next, and so on, until you were done. With NLE software, you can move clips around at will, until you're completely happy with your edit.

NTSC
NTSC stands for National Television Standards Committee. It's the TV standard for the USA and Japan, with a peculiar framerate of 29.97 frames per second. This unusual figure leads to all sorts of editing difficulties. Many DV filmmakers in the US use PAL cameras, due to their higher quality, and because they are better for creating a 'film look'.

PAL
PAL stand for Phase Alternate by Line, which is a TV standard for Europe, Asia and Australia, using 25 frames per second. A higher quality than NTSC, it is ideal for digital video work.

Rendering
Effects and transitions require extra computer processing before they can be output. This processing is called rendering, and is one of the most time-consuming parts of editing, which is why real-time (render-free) effects are so popular with editors.

1. To give yourself the best chance of getting a good edit, you'll need to shoot plenty of 'coverage': wide shots, medium shots and close-ups.

2. A cutaway to something other than the main action can be used to cover difficult edits.

3. In a sequence shot – also known as a tracking shot – the camera follows the action.

4. A montage can be used effectively for dream sequences and flashbacks.

5. To show two people in conversation, but not in the same shot, use angle reverse.

6. Continuity editing shows a scene unravelling smoothly and enables the viewer to concentrate on the action without noticing the cuts.

7. A jump cut is used to create an abrupt change between two similar shots.

8. It's only when a series of shots are edited together that they tell a story. Here, we don't know if the man is running from, or after, something.

"ROBERT ALTMAN'S *THE PLAYER* OPENED WITH AN EXCEPTIONALLY LONG TRACKING SHOT, AND IN 2002 THE FEATURE FILM *RUSSIAN ARK*, BY DIRECTOR ALEKSANDR SOKUROV, WAS SHOT AS ONE LONG SEQUENCE"

Rough cut

When you first assemble your clips in the timeline, you make a rough approximation of the final film; most of the clips are in order, and you can tell what happens, but the editing is far from precise. The rough cut is used to tell whether the basic structure of the edit is working.

Rushes

After a day's shooting, the director watches the day's work to see what they've got. In the film-world these 'rushes' or 'dailies' are copies of the original negative, but with DV you're using the master tape, which is why you should watch the rushes once without rewinding or fast forwarding. If necessary, make a copy of the rushes on VHS as you watch, and use the VHS copy if you need to review the clips again.

Scene

A scene is a series of shots that take place in the same location.

Sequence shot

The sequence shot is usually one long take, with the camera travelling around and following the action. Robert Altman's *The Player* opened with an exceptionally long tracking shot, and in 2002 the feature film *Russian Ark*, by director Aleksandr Sokurov, was shot as one long sequence.

Shot

Each scene is made of one or more shots, which together tell the story. When you set up the camera in a new place, it's a new shot.

Take

Every shot is taken at least once, and that is Take 1. On feature films, a shot may be taken ten times or more, although good directors get what they want in fewer takes. Too many takes make editing time-consuming, but too few can make it almost impossible.

Timeline

The timeline is the place where you arrange your video clips, from left to right.

Trim

Trimming means to cut frames from a clip to make it shorter. You can also lengthen a clip by trimming. ca-p

Editing your footage

All the components needed to complete this tutorial can be found on the cover CD in the Software\Tutorials\Tutorial files\Tutorial Files\All\Editing folder.

In this tutorial, we show you how to load your footage into the computer, make a rough cut, then trim it to perfection in *Avid Free DV* – free on your cover CD...

Part 1: Capturing footage

Choosing which takes to load up into the computer is your first creative editing decision...

Listen while you work

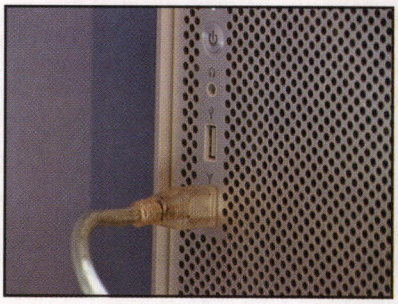
Use headphones while editing. This helps you focus on your work, rather than being distracted by outside noise. Headphones also give you a clear indication of how well the sound has been recorded, which wouldn't be obvious through a computer speaker.

Capture more

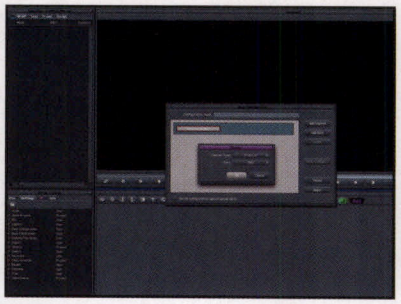
It's best to capture a few seconds more than you think you need on either side of the clip. You shouldn't bother to capture the clapperboard, but capture from just before the 'action' call, and just after 'cut'. These 'handles' at either end of your clip give you more to choose from when editing. In *Flower Power*, several final clips were shot before 'action' was called.

Choosing takes

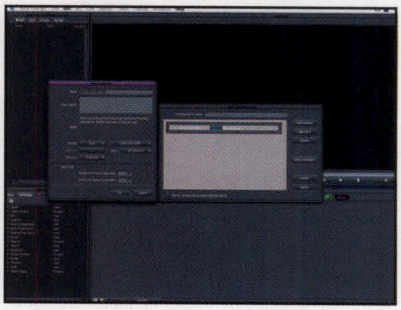
It's easy to get bogged down with the technicalities of editing, and forget that you're editing together a performance. When choosing which clips to add to a sequence, go for the best performance, rather than the take that's easiest to edit. In *Flower Power*, it may look as though we're switching back and forth to a single take of the master shot, but we're actually switching to different versions of the take, grabbing the best moments of acting.



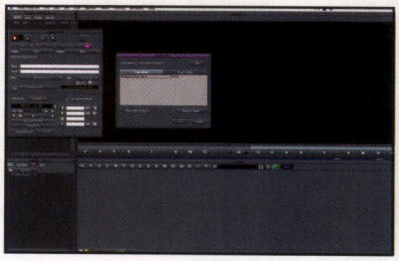
1 Watch through your tape and decide which takes are worth using. Even some ruined takes might have worthwhile material. Attach your camera to the computer with a FireWire cable, switch on the camera, launch *Avid Free DV* and create a DV PAL project.



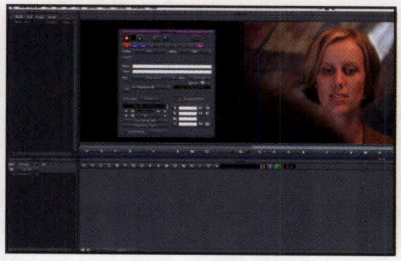
2 Click the Settings tab in the Project Window. Double-click Deck Configuration. If all's well, you'll see a FireWire box connected to a Camera box, and you can move to step 4. If not, click Add Channel, choose FireWire, and click No in response to the Configure Now prompt.



3 Click on Add Deck, and choose the manufacturer and model of your camera. If the exact model is missing, you can either pic a model similar to yours, or choose Generic. Click OK and you should see the channel and the device boxes connect. Click Apply to finish.

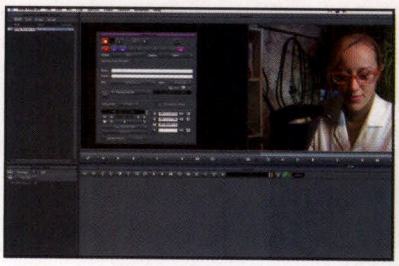


4 Go to Tools and Capture, to open the Capture Tool. Click the button labelled Tape Name?, and call your tape Flower Power 1 (or the name of your own movie). If you're using more than one tape, or making more than one film, this small step makes it much easier to keep track of your work.



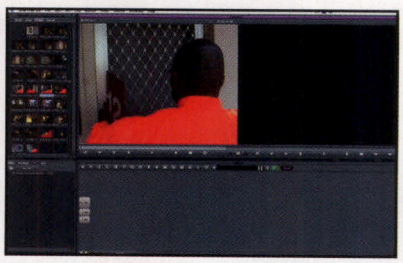
5 In the Capture Tool dialog, click on the audio and video channels V, A1, A2, to select them for capture. If you only want to capture audio, deselect the V later on. Click the hard drive symbol and choose a drive on which to store all your movie files.

6 Use the standard play forward and rewind buttons in the Capture Tool to navigate through a tape. When you want to capture, set the tape playing, and click the red Capture button. When you've captured as much of the clip as you want, click the Capture button again.



7 To capture more accurately, move through the tape to the exact frame you want to start at, and Press I for In. Move to the exact end of the clip and press O, for Out, then click Capture. This accuracy is only required if you know exactly how much of a clip will be used.

8 When all your clips are loaded, you can rename them, by clicking on them in the Brief tab and retyping the name. Some editors prefer to use scenes and take numbers, but it can be easier to use more descriptive names.



9 Click on the Frame tab to see the clips represented by thumbnails. Whatever you call your clips, these thumbnails help you to see which clip you're choosing, so long as your clips don't all start with the clapperboard.

Part 2: Importing

Movie files, audio and still images can all be imported to your project...

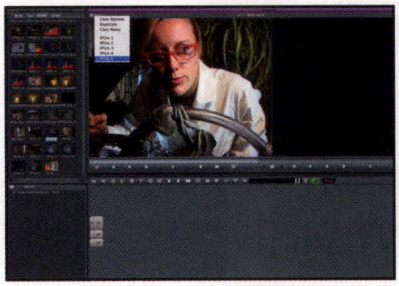
1 To add pre-prepared images or footage to your project, you import the files. For this tutorial, you'll need to import the Flower Footage from the cover CD. Go to File and choose Import.

2 Select the files that you want to Import, Shift-clicking to select multiple files. The resolution should be set to DV 25 420. You can also choose a separate disc for storing video and media files. Make sure you choose a disc with enough room.

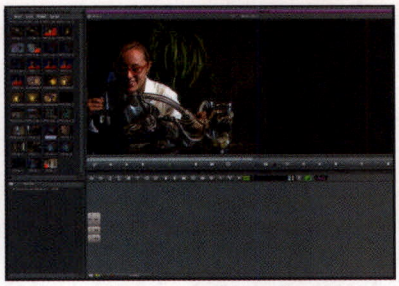
3 Click Open, and the files will automatically be imported. *Avid Free DV* takes a long time to convert QuickTime files, so if you want to get editing quickly, just import a few files. Or put the kettle on and wait while it does the work.

Part 3: Navigating

To edit successfully, you need to feel confident navigating through your clips...



1 To view clips in the left-hand source monitor, double-click the clip's icon in the Frame tab. Load FP1A takes 1-5 by double-clicking each in turn. This loads them into the source monitor, and you can switch between them by clicking on the clip's name at the top of the source monitor.



2 Drag through the clip by clicking on the blue position indicator at the bottom of the source window. Or you can press the spacebar to start playing a clip, and press it again to stop.

3 For more accurate movement through a clip use the J, K and L keys. Press L once to place forward, and keep pressing it to move faster. K will stop the clip. J is the rewind button. The 3 and 4 keys enable you to move backwards and forwards one frame at a time.

Part 4: Getting to the timeline

Before taking clips to the timeline, you need to decide how much of the clip will be seen...

1 Load a wide shot (FP1A-2) into the source monitor. Go to the point where you want the clip to start, and press I to mark the In point, then go to the point where she reaches the table, and click O to mark the Out point.

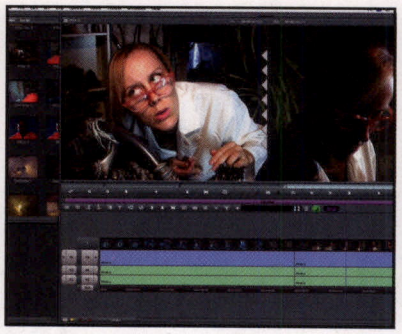
2 Click the yellow Splice button. Your footage appears in track V1 of the timeline, and in the right-hand Record window. Mark one of the FP1B takes with In and Out points and click Splice. Now load FP1A-2, mark In and Out points for the clip and splice this in. Press play in the Record window to see your edited sequence.

3 The close-up of the jug is missing. Drag the blue Position Indicator through the timeline, to the point where you want the water-pouring shot to be inserted. Now load FP1C-2 into the source window, and mark its In and Out points. Click the Splice button and the sequence is complete, albeit rough around the edges.

Part 5: Storyboarding

You can speed up your editing by using the storyboard feature of *Avid Free DV*...

1 Go to the Frame tab, and choose the clips you want to use in a sequence. Drag them into a free area of the frame, in the order that you think they should appear. Decisions are never final when editing, so don't worry about being too precise.



2 Load each of your chosen clips in turn to the source monitor, and set In and Out points for each. Again, you don't need to be too exact, because you'll refine the edit points later, but be accurate enough so that the clip is within a couple of seconds of its expected length.

3 Place the position indicator in the timeline, at the point where you want this sequence to appear. Back in the Frame tab, click and drag around the clips, to lasso them. When they've been selected, hold down Alt (Windows) or Option (Mac) key and drag the clips to the timeline.

Part 6: Refining edits

You'll change your mind about which clips go where, so start shifting things into their correct places...

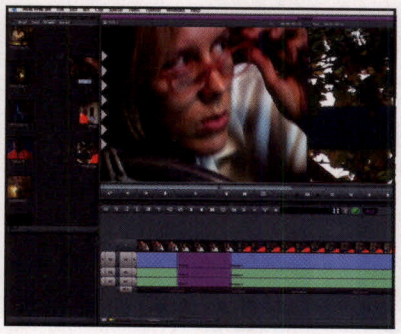
In and out

When marking In and Out points, notice the saw tooth that appears on the edge of the source window. When you select an In point, the saw tooth appears on the left, and the Out point creates a saw tooth on the right. At the bottom of the window you'll also see the crescent-shaped In and Out markers. Get to know these icons, because they can help you understand where you are in a clip.

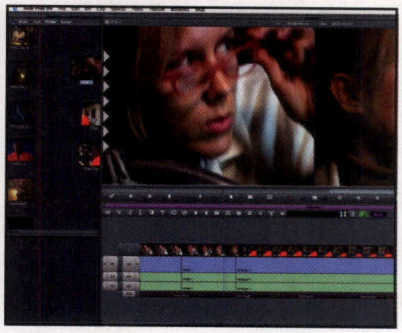
Edit choice

When you use single-roller editing, you can make two clips cut together on an exact action, such as a door bursting open. Once you've done this, you can switch back to double-rollers and slide the transition point around. The clips are in sync, so you don't have to cut on the exact action. Use the rollers to slide the transition around and see if there's a better cut-point.

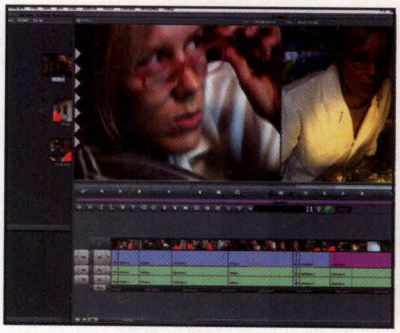
1 Three-point editing is an excellent way to replace footage. Click a clip in the timeline, to be replaced with another piece of footage. By selecting this clip, you've chosen two points for your edit. Whatever you replace this clip with, it'll start and end at the same points on the timeline.



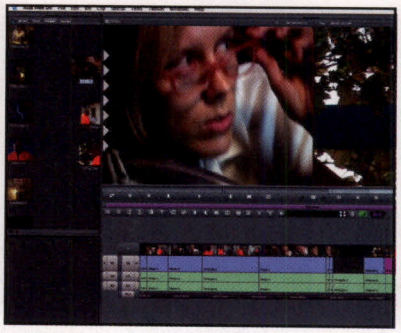
2 Open a replacement clip in the source window, and mark an In point. You've now chosen three points for your edit. There's no need to choose an Out point, because this clip will be slotted into the space on the timeline.



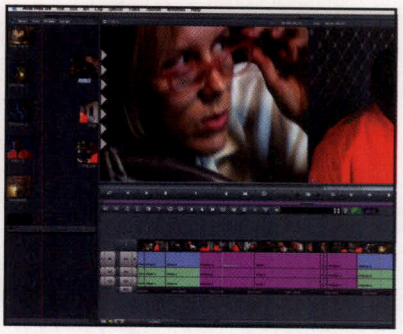
3 Click the red Overwrite button and your three-point edit is complete. You can also perform three-point edits by selecting the Out point in your source clip.



4 Sometimes a clip is the length you want it to be but it's in the wrong place. To drag it to another point, click on the yellow arrow at the very bottom of the screen. This enables you to click and drag clips through the timeline, without altering the overall length of the sequence.



5 You can also select the red Overwrite tool to move clips. When you use this tool, the clip leaves a gap in the timeline and replaces the footage where you drop it. If you make a mistake, select Edit>Undo, and try again.



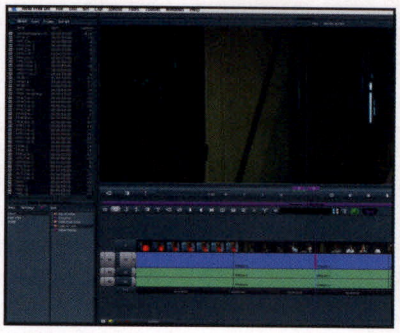
6 To move several clips or entire scenes through the timeline, click on the grey area above the clips, and drag around to select them. Now click and drag the selection to a new position. You can assemble your entire film into a rough cut using these tools.

Part 7: Fine cut

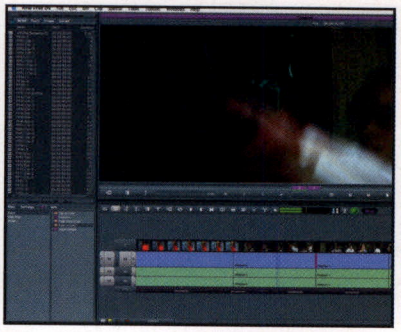
It's time to refine your cuts, trimming off unwanted frames and making everything flow together...

Save regularly

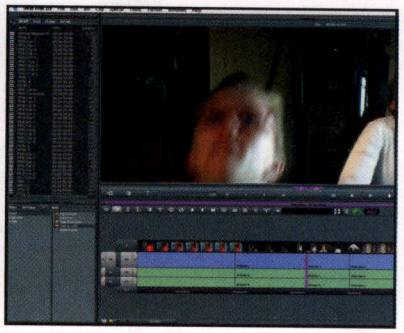
One power-cut or crash will convince you of the importance of regular saves. You can achieve a lot in ten minutes of editing, but if you lose your work, it might take you an hour to repeat what you'd done. Most editors develop a reflex of hitting Save every few minutes, or every time they make a good cut.



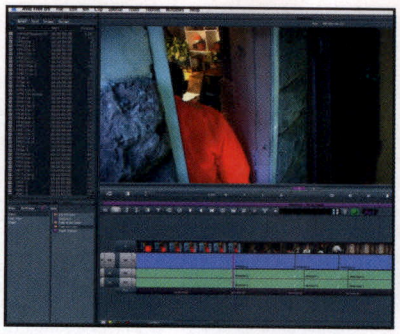
1 In the timeline, drag the position indicator to a transition point between two clips. Click the Trim Mode button and double-rollers appear over the transition point. The left window shows the last frame of one clip, and the right window shows the first frame of the next clip.



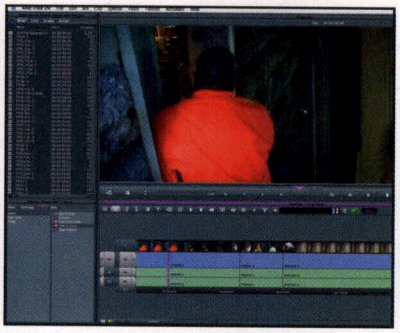
2 Click Play Loop on the right to watch the transition. By clicking and dragging the roller, you change the transition point, but the entire sequence remains the exact same length. When you shorten one clip with double-rollers, you lengthen the other.



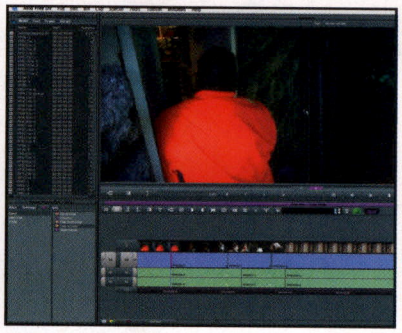
3 You can also use the Trim buttons (which look like left and right arrows) to trim clips. The purple frame counters show you how many frames are being added or removed on each side. To keep the sound in sync, Shift-click the soundtracks when performing trims.



4 Sometimes, the double-roller trim doesn't work, because no matter where you move the transition point, the clips don't match up. In our example, Eddie is through the door in one clip, long before he opens the door in the other. The solution is a single-roller trim.



5 Click on one side of the left-side transition, and the double-rollers will convert to single-rollers. If you drag to the left, you will shorten the clip, trimming frames off the end. You can see what's happening in the window above.

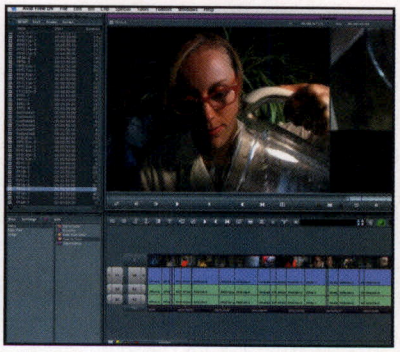


6 You can also lengthen the clip by dragging to the right. Click on the other side of the transition, and trim the second clip. You can trim both clips so that the burst through the door happens at exactly the same frame for both clips.

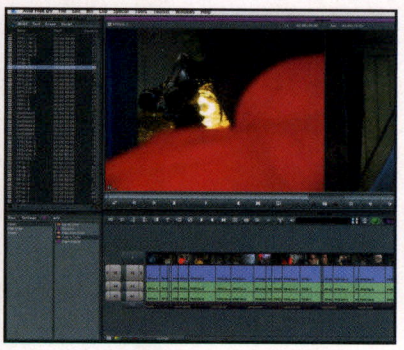
Part 8: Cutting points

Once you know how to cut, you need to learn the best places to make your cuts...

1 Editors often say that you should 'cut on the look'. This means that when a character looks around or changes what they're looking at, you cut to a new shot. Watch film and TV, and you'll see how often this technique is used.



2 Another good time to cut is when something moves. If an actor scratches their nose, shuts a door, or turns around, that's a good time to cut the action. The actor's movement hides the cut, so the viewer keeps watching the action, rather than noticing the cut.



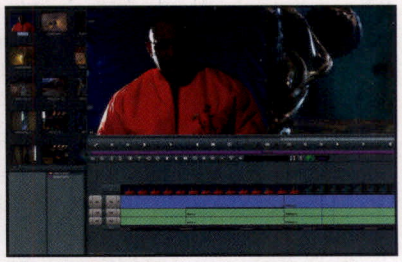
3 Be aware of rhythm when cutting. If all your shots are the same length, the result is boring. When tension builds, it's good for all shots to become shorter and shorter. Once you've established this rhythm, you can create even more tension by holding a shot longer than expected.

Part 9: Connecting thoughts

Use cuts to show how people, ideas and themes relate in your film…

1 As scripted, Eddie looks down the stairs because he hears noises from there. During the edit, we found that if his close-up comes just after Claire shouts, it makes more sense for him to peer into the darkness.

2 We need to know that Eddie has seen the gun, so we can't show the gun without showing him. Equally, if we show his face, without the gun, he could be looking at something else. So we cut from him, to the gun, then back to him.

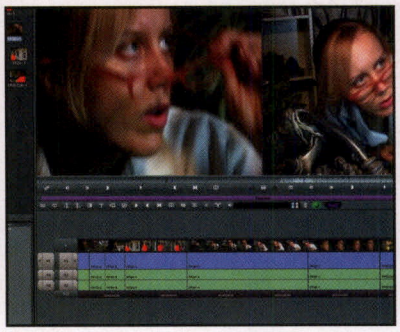


3 Sometimes you need to give the audience pause for thought. After the FX shot of Eddie in the strange land, it takes a few moments for all the implications to sink in. Cut to an empty screen and a slow scene to give the audience a break.

Part 10: Fast cuts

Avoid making everything as short and fast as possible. Fast cuts should have real power when you use them…

1 When Eddie bursts in, we need to create the sense of a real accident. This was shot in a highly unrealistic way, with Claire a long way from the door, and everything happening slowly. To make it look real, use fast cuts at the point of action.

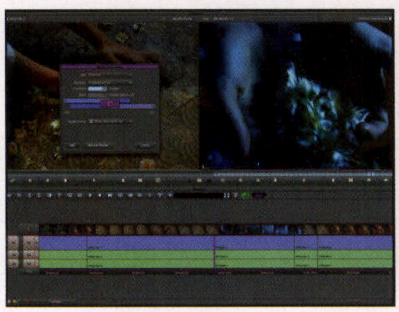


2 When Claire first responds to the knocking, we jump-cut between two similar shots, to make her reaction more dramatic. Rather than editing these accurately, several frames are missing, to make her stand up quicker than is possible.

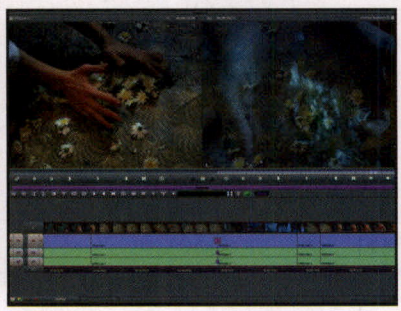
3 *Flower Power* takes place virtually in real time, but after we see Eddie, things speed up. Claire picks up the flowers, and then we cut to the blender. To show her cross the room to the blender would be boring now that the story is over.

Part 11: Transitions

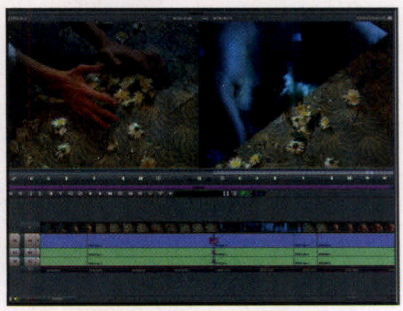
When your edit points have all been decided, you can add transitions to smooth the flow between clips…



1 A dissolve transition is a good way to show that time has passed between the shots. Control-click (Windows) or Command-click (Mac) near a transition point, and click the Quick Transitions button.



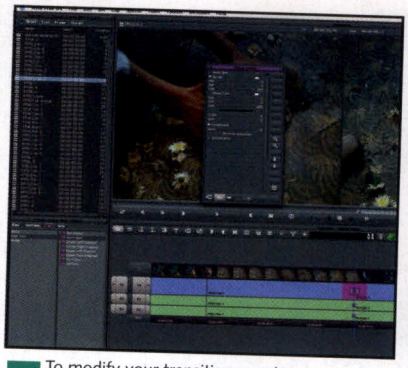
2 Click the Add button to add the default effect. Click the Play Loop button to watch the transition. Next to the settings tab there's a purple effects box tab. Click this, and drag your chosen transitions to the timeline as needed.



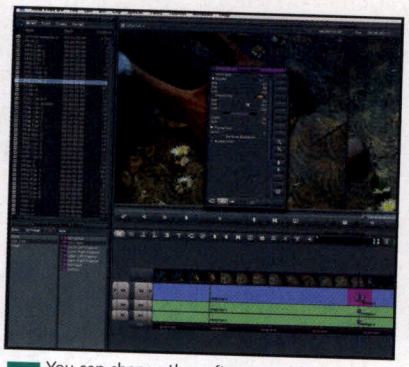
3 Unlike cuts, which are usually meant to be invisible to the audience, wipes are a way of drawing attention to the transition. This can be useful if you want to show that you're moving to another scene, country or galaxy.

Effects shots

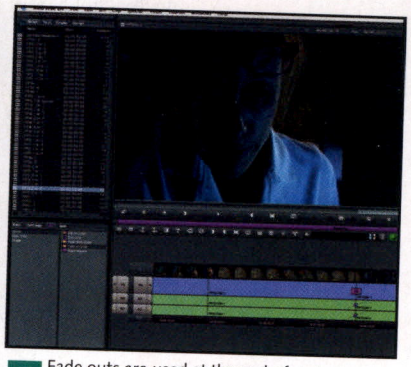
Don't work on your effect shots until all your editing has been completed. Only when you've 'locked off' the final cut of the film should you export effects shots for editing in *After Effects*. The longer your effects shots, the more time it will take to complete them, so it's better to be certain of their length before starting the FX work.



4 To modify your transitions, go to Toolsets>Effects Editing. With the Effects Editor selected, you can also remove a transition, by clicking on the purple icon in the timeline and hitting Delete.



5 You can change the softness, width and colour of your transition's edges. Again, the default settings are often exactly what you need, but if you have a particular effect in mind which suits your story, create it with the Effects Editor.



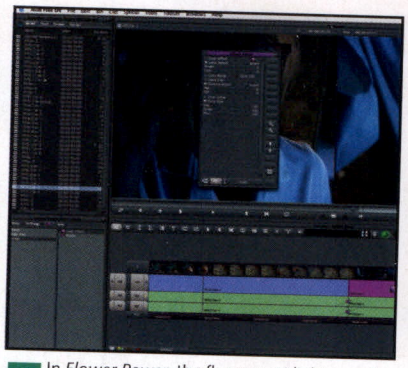
6 Fade outs are used at the end of major scenes (usually no more than twice a feature film), or at the end of your movie. To create a fade out, apply the Fade To Colour effect to the end of a clip, and set the colour to black.

Part 12: Colour correction

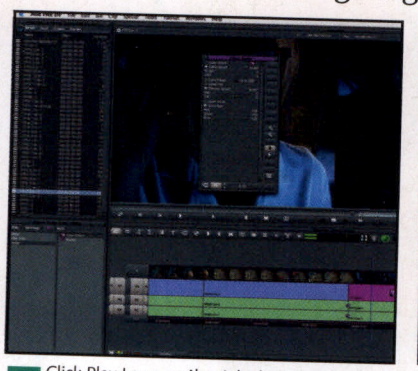
When you've got your shots where you want them, you can match the lighting between shots...

Non-destructive

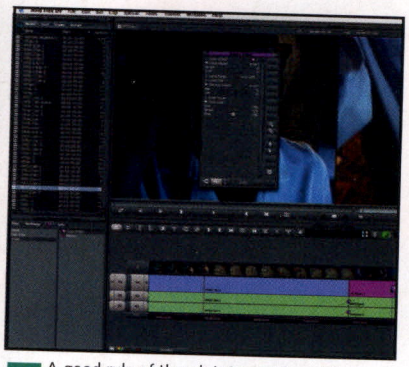
Non-Linear Editing is non-destructive, meaning that you can cut, copy, paste and shift your clips in the timeline without actually affecting the clips on your hard drive. No matter what you do to a clip, you can simply double-click it again and everything will be back to normal.



1 In *Flower Power*, the fluorescent light used in Claire's close-ups is far too blue, and needs to be warmed up. From the Effects tab, drag the Colour Effect onto your clip.

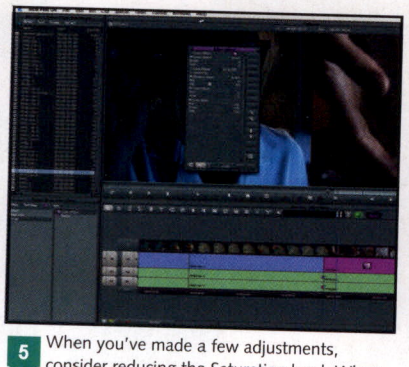


2 Click Play Loop on the right-hand edge of the Effects Editor to see any changes you make. Before making adjustments, watch through the clip several times to see what needs to be changed, and what should stay the same.

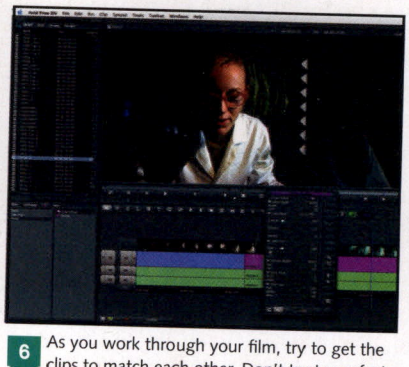


3 A good rule of thumb is to get the whites looking white again. Adjust the Colour Gain tools until the white coat looks white, without the other colours being too disturbed. You need to experiment to get the look you want because every shot is different.

4 When your whites are white, check the flesh tones of your actors. Although you may add many effects that change the look later on, your starting point should be well-lit, realistic flesh tones, or your character may look flushed or pale.



5 When you've made a few adjustments, consider reducing the Saturation level. When changing the Colour Gain, it's easy to over-saturate an image in an attempt to get the colours where you want them.



6 As you work through your film, try to get the clips to match each other. Don't try to perfect a clip in isolation, but see how it looks in the context of your overall edit. You won't always get an exact match, but the closer you can get, the better the end results. **cap**

CONNECTIN O LEADS.
PHONO TO OPTICAL
OUTPUT MANDAT Y. CONVERT
SAMPLING RATE 8.000KHZ
CAPTURE DV CA AUDIO.
MOTION BLUR
GRADE ROTATION
OAD THE SAMPLES. CHECK
HD. DOLBY CHECK. CAN YOU THE SURROUND
TWO. CHECK. PLUG IN TO U HEAR ME?
EASE THE HIGH END.
E OPTICAL A VD

Laying down the sound

In this section of the tutorial, words, sounds and music are recorded, processed and mixed, to bring your film to life...

Getting the soundtrack and music right will make or break your movie. Think of what the classic *Jaws* would be like without the menacing, tense music; what effect the infamous shower scene in *Psycho* would have without the now synonymous knife screeches; or how *Pulp Fiction* would feel without an original soundtrack.

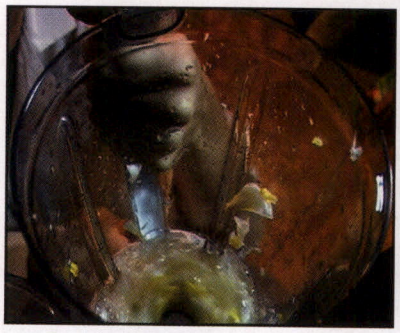
Even though your short film isn't on the same scale as a Hollywood blockbuster, getting the soundtrack, effects and other audio right is extremely important. Many tools nowadays enable you to create royalty-free soundtracks to use in your movie – so you don't have to worry about rights and paying a big wedge of cash to use commercial music. You should also think practically about sound effects. You can record a number of effects simply using the mic on your DV cam – just split the footage from your audio in your video-editing application.

Throughout the following tutorial we show you the expertise you need to create a brilliant royalty-free soundtrack and sound effects in no time at all...

All the components needed to complete this tutorial can be found on the cover CD in the Software\Tutorials\Tutorial files\Tutorial Files\All\Soundtrack folder.

Part 1: Soundscape

A good sound mix sets your film apart from the average movie...



1 Open the file FP Unmixed.mov, and watch the film. This version uses the original sound recorded on set, with no music. You'll notice that there are many buzzes and clicks, and that the sounds of the blender and doors are weak. Without music, there is no real film.

2 Watch the completed film, paying close attention to the changed sounds. Although the music is an obvious change, you'll hear that all the important noises have been re-recorded, and that sound effects have been added.

3 When working with your own footage, or your own edit of this film, watch through your completed movies, and take note of sounds that should be removed or replaced, and dialogue that needs re-recording for greater clarity.

Part 2: Spotting

Before you record a note of music, watch your film and 'spot' the places where music would work best...

Acid Windows

PC users can use *Acid Pro 4.0* to create loop-based music. The beauty of *Acid* is that, like *Soundtrack*, it can be used as a mini mixing and recording studio. For non-musicians, the CD of music loops makes soundtrack creation as easy as drag and drop. The CD contains genres from Hip-Hop and Techno, to Ambient and Orchestral.

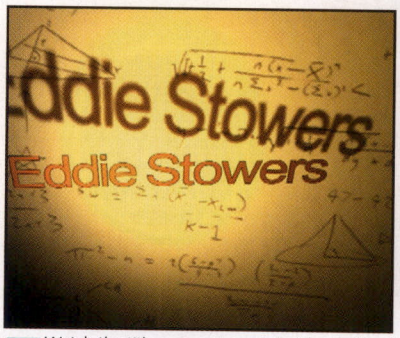
Temp tracks

One way to find out what sort of music will match your film is to use your CD collection. Drag your favourite pieces of music to the timeline and test them out. Be wary of this approach though, because many a director has added a favourite song and then found it too heartbreaking to replace. But be aware, if you ever screen your movie, popular songs cost thousands of pounds.

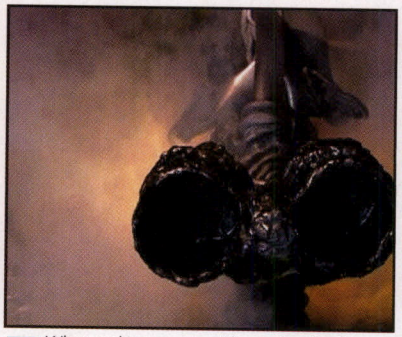
1 Watch your film noting the changing themes and moods. Does it require music all the way, or would it be best to save music for emotional changes? Note the points you think need music, and imagine what type of music would work best.

2 Take particular note of dramatic low points where the story is progressing, but don't be overly dramatic. Silence may work best, to provide contrast to the following action. Or you can build tension through the use of music.

3 Also note the dramatic high points. Although music can work well at a moment of drama, it often stops as the actions ends. If you think it would be good for the music to come to a halt, when should it start again?



4 Watch the title sequence, and decide whether the title music should stop when the first shot begins, fade out gradually, or continue running through the first scene. If you stop the music, you underline that the film has started; but if you keep it going, there's a rhythm that leads into the film.



5 When making your spotting notes, think about the balance between effects and music. If you know there's going to be the sound of a ray-gun building up, will music compete with the sound too much? If there's soft dialogue, can you afford a pumping bass?

6 Where the last shot ends and the credits begin, the music will either start up again or change, so think about what impression you want to create. Repetition of a theme is a standard way to signal that everything's over.

Part 3: Re-recording

The sounds you record on set are rarely good enough to make the final mix, so re-record them...

Too much noise

When you've spent a few hours working with your soundtrack, take a break, then listen to it again to check whether it's too noisy. When you've been working with sound for hours you become immune to it, and the danger is that you create a violently noisy mix, which is too much for the average audience.

Will it really be heard?

Sometimes, background atmosphere and quiet effects may barely be audible in the mix. You may wonder if it's really worth leaving them in. Usually, the answer is yes. Background atmosphere, although not consciously heard, makes a huge difference when cutting between outdoor and indoor scenes.

Recording dialogue

When recording sound on set, there are two approaches. One is to use the best boom mic, and get the best quality sound you can. The other approach is to say that on-set sound is never good enough and just use the on-camera mic for reference, then re-record everything later. Many feature films are made in this way, so it's a workable solution if you're confident about getting actors to sync their lines.

1 When recording sound or dialogue, don't leave the lens cap on. If you shoot with the lens cap off, it's easy to see which sound you were recording when you come to capture. You still only capture the sound, but the visuals help you navigate.

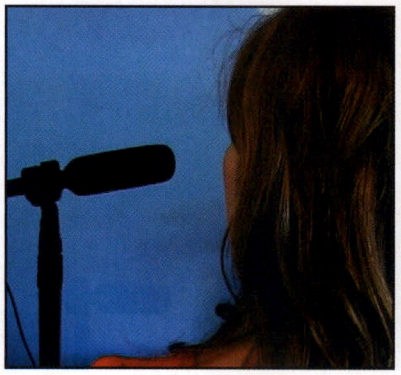
2 Put headphones on while recording sound, and turn the volume up so you can only hear what's coming through the camera's mic. Record outdoor atmosphere, or the sound of empty rooms, depending on what your film requires. Always keep the wind off the mic, because it makes a booming sound.

3 Record the rustling of clothes. Put the microphone as close to the sound source as possible, to get a good, clear sound. Although this will be way down in the mix, clarity is always important. When recording footsteps, record single steps (which can be laid over each real footstep), or recreate the exact stepping pattern of the actor.

4 Record the basic sounds that need to be replaced, such as doors, handles, switches and water being poured. Don't limit yourself to using the same props that were in the film. If you find a door handle that sounds better than the real one, use that instead.

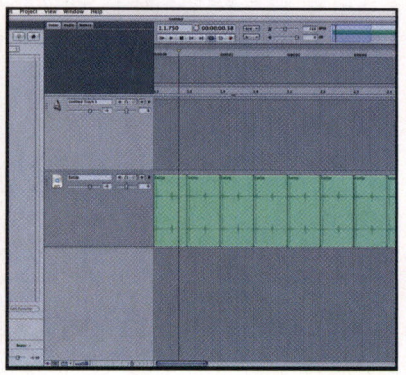
5 You can also replicate what happened on set – to recreate the sound of the falling flowers, they were dropped right next to the microphone. This is a highly exaggerated sound, because most of the flowers landed on Claire's back, but as this is the last audio before silence, it needs to be clear.

6 You should also record a variety of unusual noises, which may not have any obvious use. This is true even of a conventional film, not just science fiction. Here, a knife grinder sound was recorded, and when processed, this became the sound of the ray gun powering up.



7 Don't underestimate the usefulness of actors. The sound of the wind in *Flower Power* (when Eddie appears in the strange landscape) was made by an actor, as were the gurgles and burps. Give your actors a list of noises and see what happens.

8 Don't assume that just because a sound was recorded well on the day, that it can be used in the final mix. Although the blender sounded clear, the original noise was too sloppy. Re-record a sound that gives a better match to the visuals.



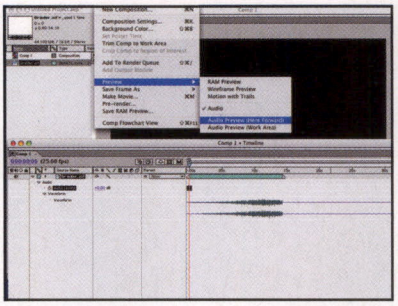
9 To re-record dialogue, use your audio software (or *After Effects*) to loop each line. Get your actor to put on headphones, and record them copying the phrase. When syncing these with the footage, align them with sound rather than visuals.

Part 4: Sound effects

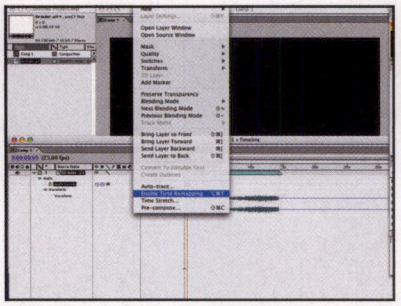
One of the best ways to create unusual sounds is to slow down your recordings...

Broadcast legality

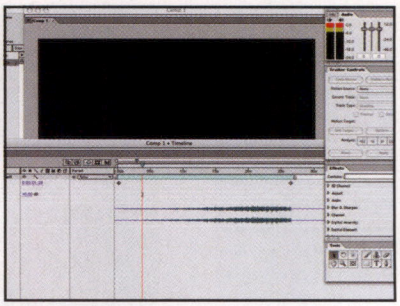
When you output your final mix back to your editing software, apply a Broadcast Legal filter. This ensures that the video and sound are acceptable for broadcast. Although you might not expect your film to end up on television, it would be a shame to get the offer and then have your tape returned because the levels are too high.



1 Capture your sound as you'd capture video, but then export your sound clip as an AIFF file. Launch *After Effects*, and drag the clip to the timeline. To hear the sound, select Composition>Preview>Audio Preview (Here Forward).



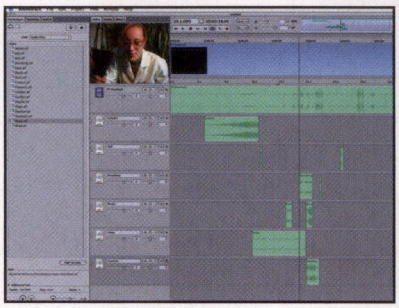
2 Choose Layer>Enable Time Remapping. You can add many keyframes and change the speed of a clip at various points, but begin by just slowing the clip. Drag the edge of clip to the right, making room for the sound when the clip slows.



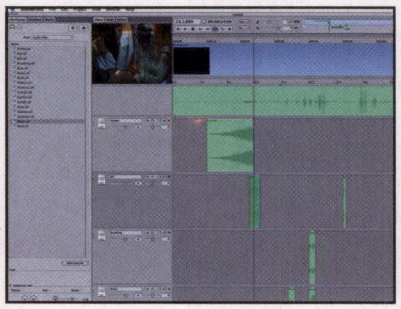
3 With the clip's properties expanded, drag the second keyframe to the far right. The further you drag it the slower the sound will be. Preview the sound again, and make adjustments until you find a sound that works.

Part 5: First mix

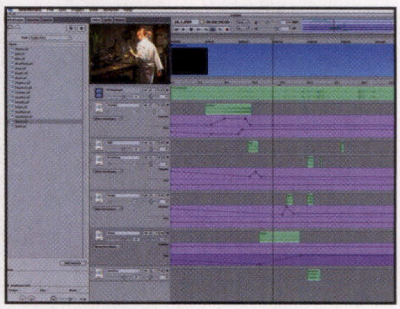
Before you add the music, drop the new sound effects and dialogue into place...



1 You can mix audio in most editing software, but here we're using *Soundtrack*. The principles are the same whatever software you use. Place the playhead where you think a sound should be, drop it into place, then make fine adjustments until it matches the original production sound.



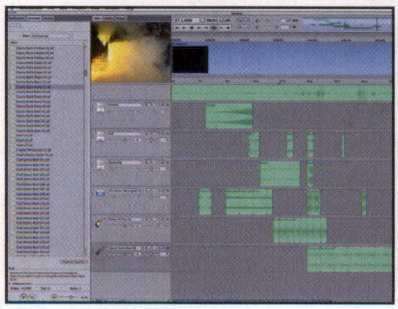
2 Your re-recorded sounds will probably have problems of their own, such as clicks, or the sound going on longer than you want. Trim the clips by dragging their edges – don't be too exact, because you will make the fine adjustments with keyframes or, if you use *Soundtrack*, envelopes.



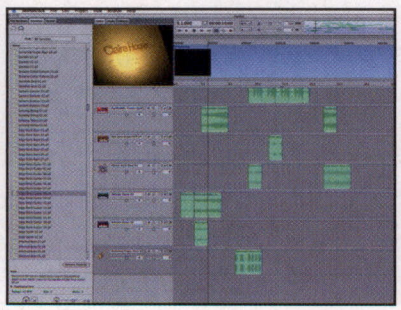
3 Expand the sound's audio keyframes or envelopes. Double-click a point on the volume line, and drag to set the volume. Go back a few frames, double-click, and drag the volume down to create a gradual fade-in. You can also control pan (left to right). This process is the essence of mixing.

Part 6: Music time

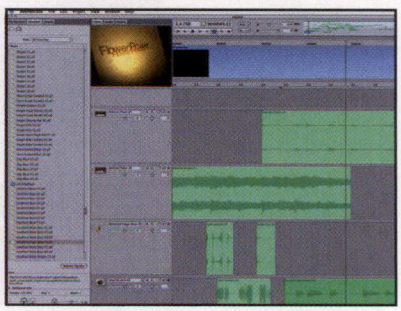
With the sounds and effects in place, start building your soundtrack with music loops...



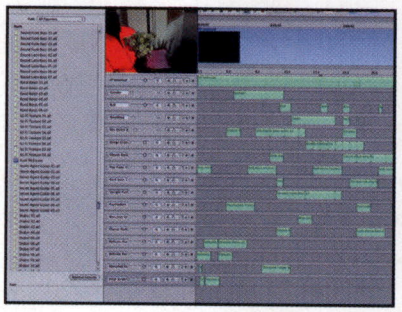
1 Loop-based music programs, such as *Soundtrack*, mean you can create music without having to play a note. Start by adding rhythms, such as drums, to check whether your spotting notes are accurate.



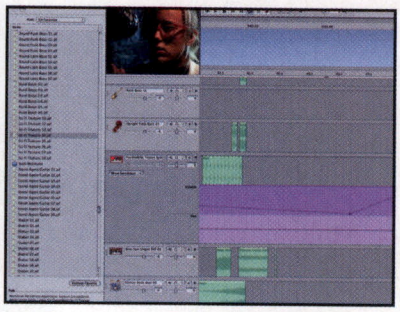
2 When the rhythm is close to being correct, add the melodies. Check your spotting notes, find loops that apply, and drag them to the timeline. Experiment with sounds that you hadn't planned to use, but make sure they suit the film.



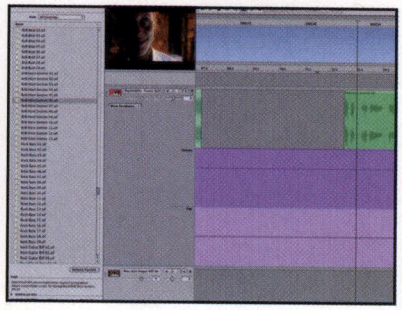
3 Once you've done the sound effects, you can really improve the mix by adding a few extra sounds. Most software contains scratchy, looping sounds or loops of animals or sound effects, which can be used as colour for your music.



4 As you build your piece, keep going back to the start and listen all the way through. Check to see that there's plenty of variety, and that you aren't just repeating sounds. Also, be aware that too much change, with a new loop every bar, will be too messy for the listener.



5 Go to any point in your film where the music comes to a complete halt. Where the music starts again, do you want a subtle build-up or a sudden jump into full music? Ensure that your music supports the intentions of the film, rather than fighting what's happening on screen.



6 Although too much repetition is a mistake, if you have one theme repeating through your soundtrack, you can bring it back at the end. In *Flower Power*, the brass band sound is used when Claire is full of enthusiasm. It then goes away, and only returns when her mood changes at the end.

Part 7: Final mix

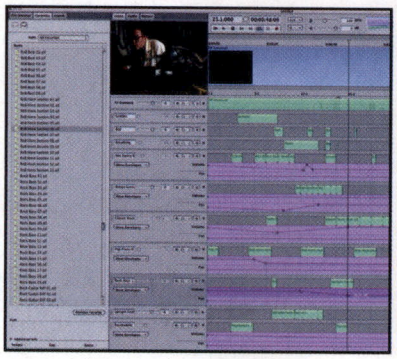
When you're happy with the music, your final mix will make sure everything can be heard...

Panning

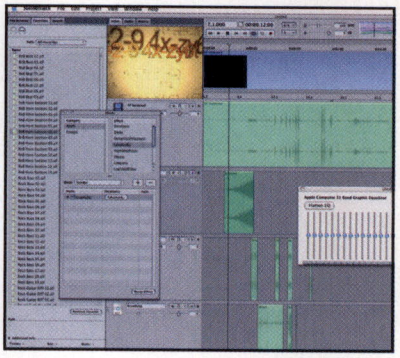
The Pan controls enable you to shift a sound from left to right. In music, there are certain conventions that you should follow if you want a sound that'll reproduce well on most speakers. Drums and bass should be panned to the centre, and the other instruments should be panned out around them but not too far away. Try to put each instrument at a slightly different distances from the centre.

Surround sound?

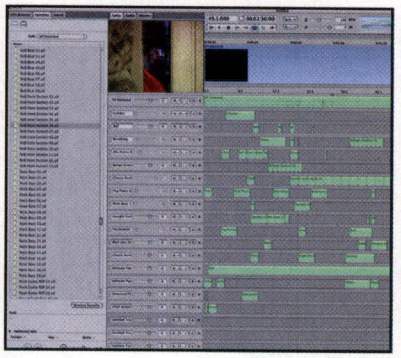
If you're set up with a superb surround sound system, you might be tempted to use the pan controls to fling your sounds all over the mix. This is best avoided, because most systems will simply lose the sounds or, even worse, lose the middle sound, so that only your panned sounds will be audible. Remember that you're mixing sound, rather than spreading it around. Some software contains specialist 5.1 Surround plug-ins, which create real surround sound for you.



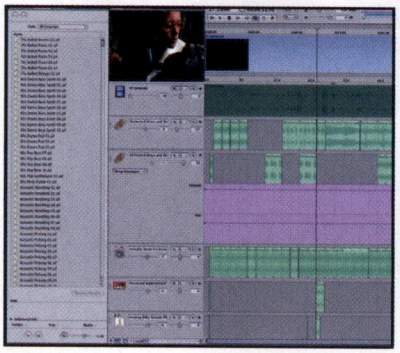
1 Use the volume keyframes or envelopes to adjust sound levels throughout the mix. Make sure every line of dialogue can be clearly heard. Use the pan controls to give the sound three dimensions, and use volume changes to underline movements.



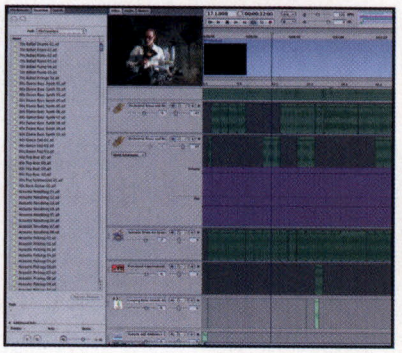
2 Most software comes with a variety of audio filters, but be wary of using these for the sake of using them. Although reverb can sound good, one of the reasons we re-record is to get rid of on-set reverb. EQ filters can help to soften sounds, and filter out unwanted noises.



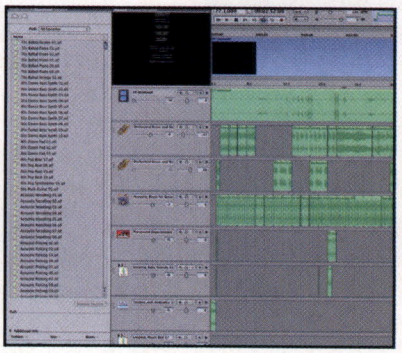
3 Before export, get somebody else to listen to the soundtrack, and check that everything that needs to be heard can be heard. Although you may hear the dialogue, that could be because you know the dialogue. Use somebody who has had nothing to do with the film until this time.



4 Traditionally, you export the music and sound without the dialogue, so that your movie can be sold abroad and dubbed in a foreign language. A better reason to export music and effects, is that you'll be able to alter the dialogue later if necessary.



5 It's also a good idea to export the music all by itself, the effects all on their own, and the dialogue to its own file. This means you can clear the hard drive of all work files, but still have some control over the mix, if you want to make changes.



6 Finally, export the complete mix back to your editing software. There shouldn't be any problems with sync, because it will be the same length as your movie. ca>p

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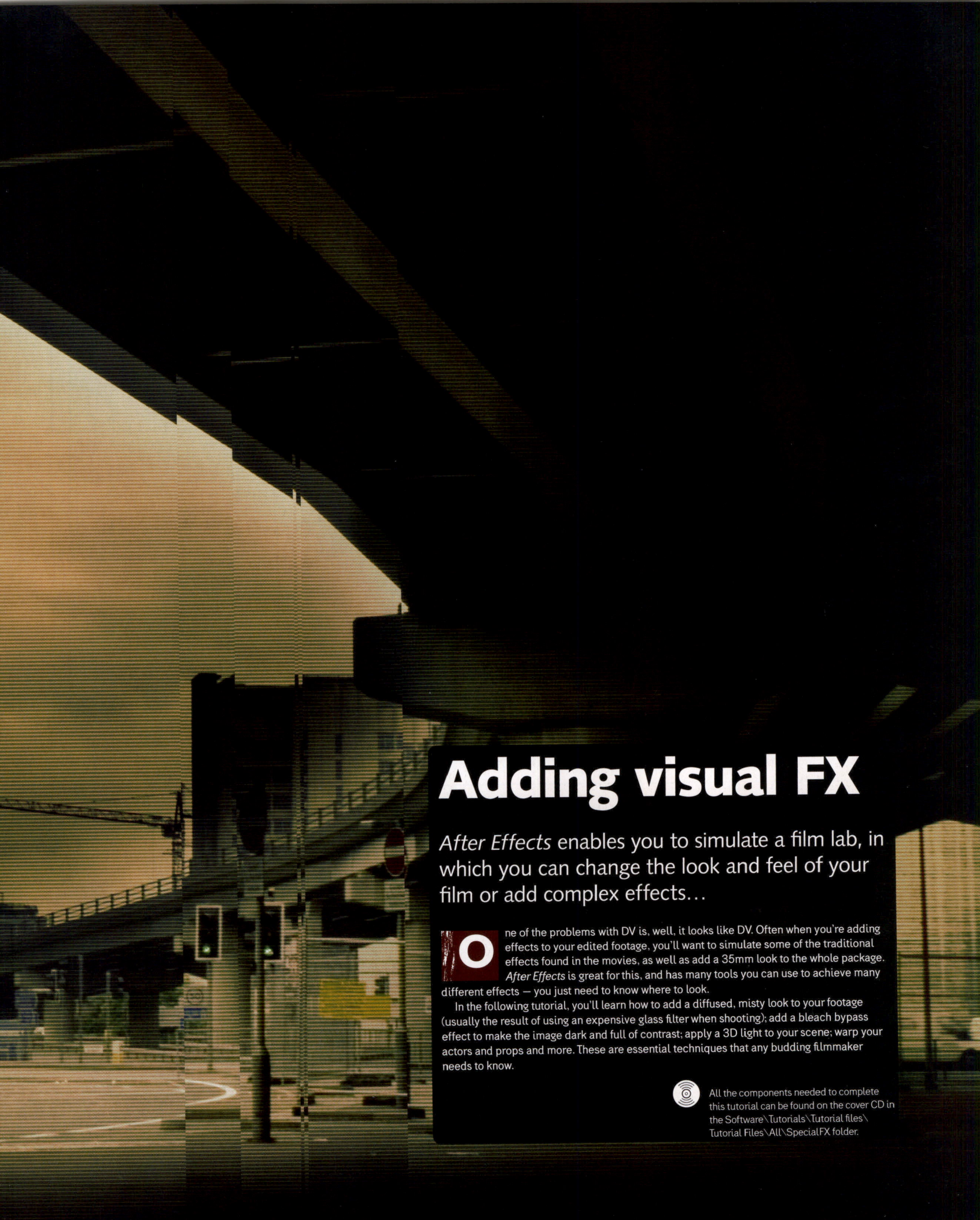


Adding visual FX

After Effects enables you to simulate a film lab, in which you can change the look and feel of your film or add complex effects...

One of the problems with DV is, well, it looks like DV. Often when you're adding effects to your edited footage, you'll want to simulate some of the traditional effects found in the movies, as well as add a 35mm look to the whole package. *After Effects* is great for this, and has many tools you can use to achieve many different effects – you just need to know where to look.

In the following tutorial, you'll learn how to add a diffused, misty look to your footage (usually the result of using an expensive glass filter when shooting); add a bleach bypass effect to make the image dark and full of contrast; apply a 3D light to your scene; warp your actors and props and more. These are essential techniques that any budding filmmaker needs to know.

All the components needed to complete this tutorial can be found on the cover CD in the Software\Tutorials\Tutorial files\Tutorial Files\All\SpecialFX folder.

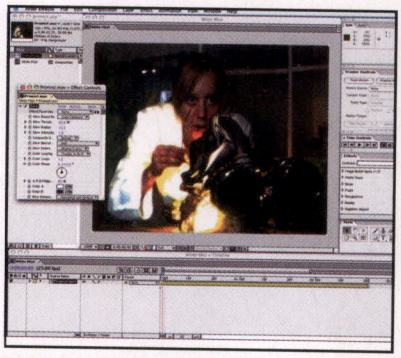
Part 1: White mist

Expensive glass filters give film a diffused, misty look, but you can create the effect in post...

Animated masks

Animated masks give you real control of your images. Drawing the initial mask is quite easy. You select the Pen tool, and click around the edge of the object you want to mask. You can use the Convert tool and the Arrow pointer to reshape the mask and perfect your work.

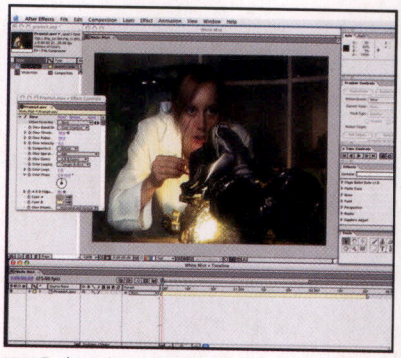
Most problems occur when the mask needs to be animated. You don't need to animate every frame; it takes too long and makes the mask stutter. Instead, move five or more frames before redrawing the mask. Watch the clip, and find each point where a major motion ends; that's the point where you should drag the mask to its new position, and the software will do the rest for you.



1 Create a New Project and New Composition, then Import the Promist.mov clip from your CD to the timeline. Choose Effects>Stylise>Glow. By letting the highlights glow, you will recreate the look of a Promist filter.

2 Adjust the Glow filter's Threshold to 30 and the Radius to 40. Don't be tempted to reduce the Glow Intensity at this point, because you want to see an exaggerated look, to help make adjustments.

3 Change the Glow Colours menu to A & B Colours. Use the eyedroppers below to select two colours. These should be taken from near the gun's glow at the bottom of the screen. One colour should be white, the other slightly yellow.



4 Reduce the Glow Intensity to 0.2, and the effect is complete. Watch the clip through, and make adjustments to the Threshold and Radius if required.

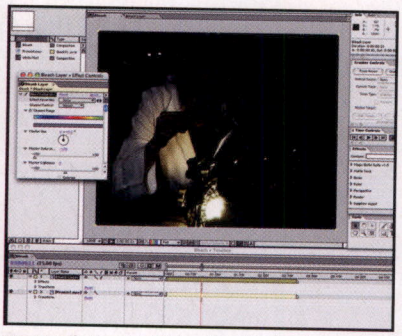
5 For a more comic-book look, you can reduce Glow Radius to 5.0. This makes the highlights appear to be almost painted on. This look is useful in dream sequences, but should be used sparingly.

6 To add an overall mistiness to the scene, rather than just glowing highlights, set the Radius to 220, and Glow Intensity to 0.3. This may reduce overall sharpness, so isn't suitable for all footage.

Part 2: Bleach bypass

This lab process leaves a layer of silver in the film, making the image dark and contrasty...

1 Drop the Promist.mov layer into the timeline, and select Edit>Duplicate. Select the highest clip, press Enter, and type in the name Bleach Layer. Change the blending mode to Multiply.

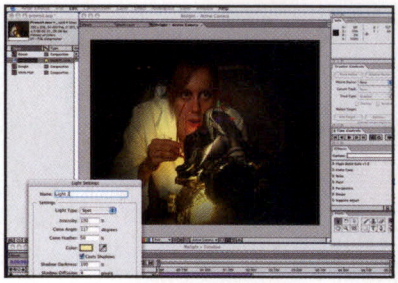


2 Apply the Hue/Saturation filter to the Bleach Layer, and remove the colour by adjusting the Master Saturation to -100. For brightly lit footage, this is all you need to do, but if your footage is dark, you need to make a final adjustment.

3 Select both clips, and apply the levels Filter to adjust the Input White setting to 120. This brings up brightness where it's required, without flaring out the whole image.

Part 3: Re-lighting

Apply a 3D light to your scene, and you effectively re-light a scene with your software...



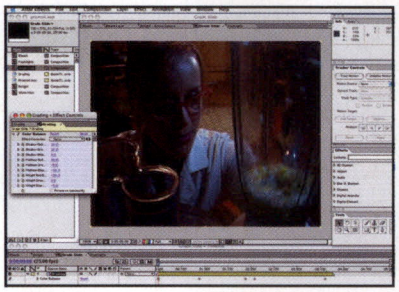
1 Drop the Promist.mov in the timeline, and click the cube icon to make the layer 3D. Choose New>Light. When the Light settings appear, choose Spot Light, and use the Eyedropper to select a warm colour from your image.

2 Expand the Light Options, and set Intensity to 160, Cone Angle to 120, and Cone Feather to 100. This lights the actor. By changing these parameters you can determine exactly how much light falls on the foreground and background.

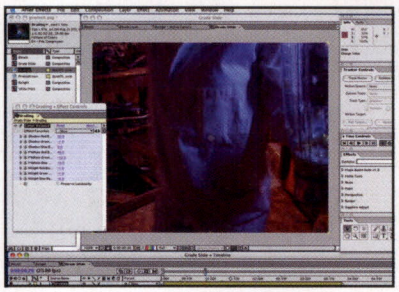
3 Move the light into its best position by dragging and rotating the coloured arrows. If your character moves during the scene, click the keyframe clock for the light's parameters, go to the end of the clip, and move the light to its final position.

Part 4: Grade rotation

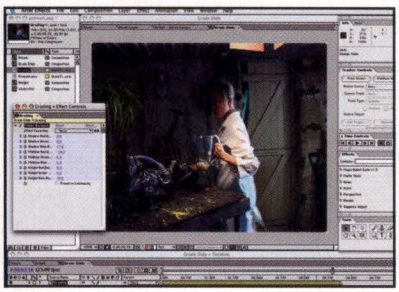
Colour Grading is used to correct light, but also to create more inventive lighting than you could get on set...



1 Import the Grading.mov to the timeline and apply the Colour Balance filter. Make adjustments to all the parameters, until the white coat loses its blue cast. Make small adjustments to the parameters to check your progress.



2 Click the keyframe clock for all the Colour Balance parameters, and move to the point in the clip where she stands up. To simulate a purplish light here, change the parameters so that the white coat has a purplish cast.



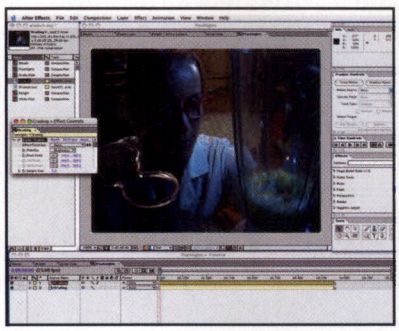
3 Move to the end of the clip, and use the Colour Balance settings to make the white coat white again, giving the surrounding light a bluish daylight tinge. You may find it easier to click Reset on the filter first.

Part 5: Light flicker

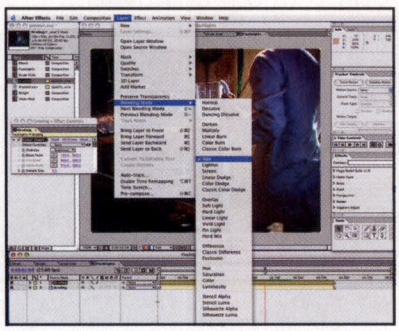
Getting lights to flicker convincingly on set is difficult, but you can create the same result with a few clicks...

TV output

Whatever effects or blending modes you use, it's a good idea to output your results to DV tape, and play them through a television. Not only is your TV probably bigger than your computer screen, but it'll display the image differently. If your film is going to be shown on the Web only, then your computer results are fine, but if you want it to be broadcast or projected at festivals, test it on TV from time to time. Contrast and effects can be exaggerated on television, and may need to be adjusted.



1 Import the Grading.mov to the timeline, and duplicate it once. Apple the Colour Stabiliser filter, and set the dropdown menu to Brightness. This filter is designed to stabilise colour, but when used in this way it makes the image flicker.

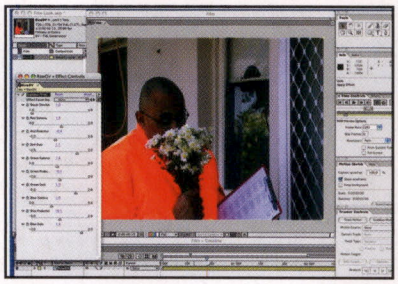


2 Set the blending mode of the upper clip to Add, and watch through the footage. If the flickering isn't exactly what you want, try moving the Black Point to another part of the image. Experiment until you get what you're after.

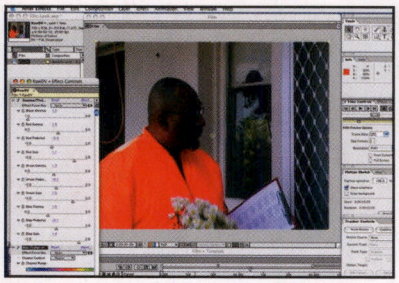
3 To make the lights flicker fully on and off, as though lighting a darkroom intermittently, change the blending mode of the upper clip to Luminosity. For this effect to be convincing, make sure you add the sound effect of a flickering light.

Part 6: Film look

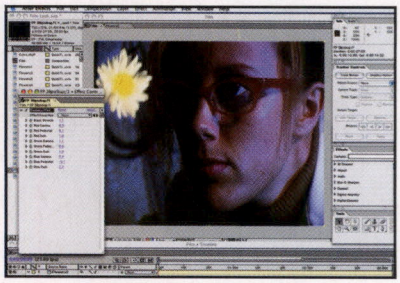
Raw video looks like it was shot with a news camera, so give it the contrast and motion blur of film...



1 Import the RawDV footage into the timeline, and apply Effects>Image Control>Gamma/Pedestal/Gain. Make tiny adjustments to these settings to change the look, without adding too much extra colour. Aim to add a bit more contrast.



2 Apply the Hue/Saturation filter, and use the Master Saturation to reduce the overall colour. A common mistake with DV is to over-saturate to look like film, but the result just looks like garish video. You're better off reducing saturation.



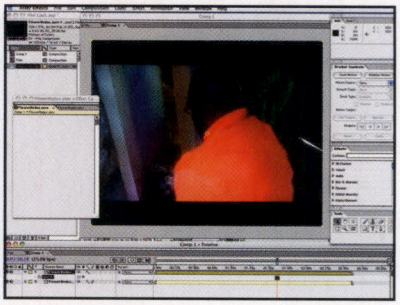
3 Although this technique helps to create a good film look, you'll need to apply and adjust these filters clip by clip. Don't be tempted to apply one filter to the whole film. Alternatively, you can use the Motion Blur technique without colour changes.

Part 7: Motion blur

The real key to a convincing film look is adding a hint of motion blur, without reducing the sharpness...

1 When all other editing and colour correction has been completed, create a New Composition long enough to take your movie. Import the entire movie to the timeline, and choose Duplicate.

2 Apply the Reduce Interlace Flicker to the lower clip, with a setting of about 20. Select the upper clip, and set the opacity to 80 per cent. Export the clip to tape and watch on television to see if the effect works, because motion blurring never shows up well on computer monitors.



3 The amount of blur you add is a matter of taste, but it should be subtle. Don't blur it so much that it looks obviously soft. An alternative approach is to set the Filter to about 6.0, and reduce the Opacity of the upper clip to 40 per cent. Test the different techniques on your film, to see which works best.

Part 8: Warping

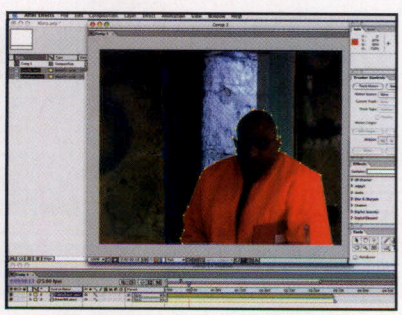
The Liquify tool enables you to distort and manipulate your images, whatever effect you have planned...

Combination filters

There are few effects filters that give you exactly the result you want, all by themselves. The secret to filters is using them in combination. In the warp sequence, where Eddie vanishes, it's the combination of the Liquify filter with two blurs and a reduced opacity which makes his disappearance work.

1 If you want to distort an actor, lock off the camera on the tripod, and shoot the actor on location. This is better than using a blue screen, because the lighting is more accurate.

2 Leave the camera running, and get the actor to walk off set. For a few seconds, shoot the empty space where the actor was standing.



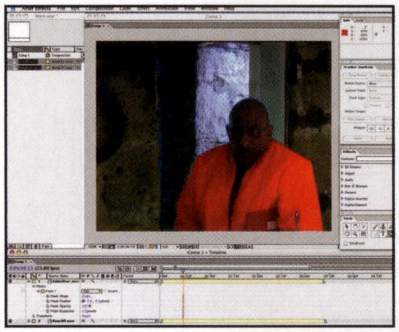
3 Put both clips in the *After Effects* timeline. Import EddieDoor.mov and DoorBG.mov. Use the Pen tool to draw a mask around Eddie. Keep the mask on the inside of his edge. Press M, and click the keyframe clock for the Mask Shape parameter.

Overkill

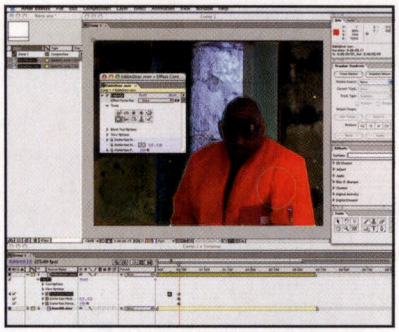
It's easy to spend a whole morning, or longer, working on an effect shot, or adding film looks to your footage. But be wary of taking the effect too far. Although a few films, such as *Minority Report* and *Underworld*, have used a very strong 'look', most films use looks subtly. After a while, watch the original footage, and make sure you've lost none of the clarity. Also ensure that your effects still reflect your original aims in terms of lighting and atmosphere.

Take a break

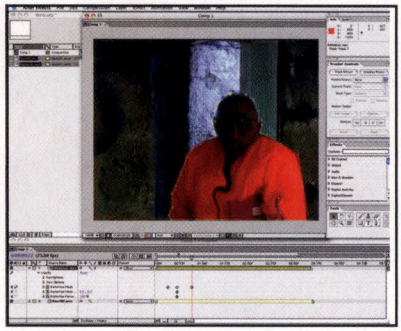
The best way to find fault with your effects work is to take a break. A few hours is okay, but an overnight break is best. When you come back to your work, you'll see it afresh. If there are problems with a mask, or if an effect is overdone, these problems will show up immediately.



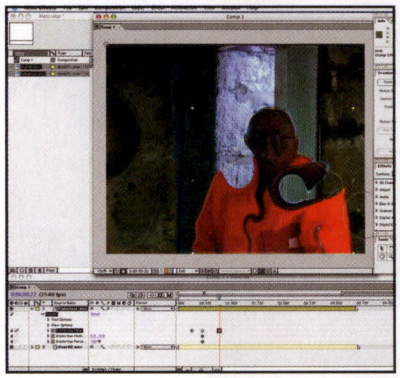
4 Adjust Edge Feathering and Mask Expand until Eddie appears to be genuinely in the location. Move a few frames into the clip, and drag the mask points to match his new position. Do this every few frames, so that the mask animates perfectly.



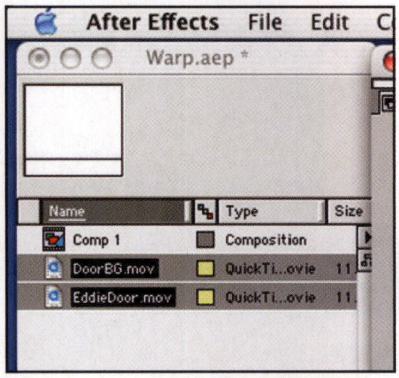
5 Apply the Liquify filter to the clip, and keyframe all parameters about nine frames into the clip. Now move forward another few frames, and use the Bloat tool to make Eddie's eyes bulge.



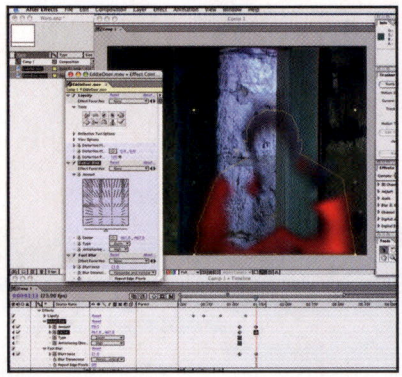
6 Move forward three frames and use both the left and right Twirl tools to add swirls and distortions to Eddie's face and body. The impression should be that his eyes bulge, then his body ripples for just a moment.



7 Move three more frames into the clip. Choose the Liquify's Mirror tool, and click on the edge of the image. This should create an area of space that matches the background. If not, choose Edit>Undo and try again. Make a couple of holes in his body.



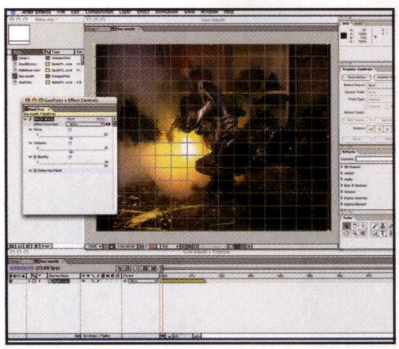
8 Move forward a few more frames, and use the Mirror tool to expand the holes that you've already made, pushing them out to the edge. Ideally, there should be a huge hole in the middle, with only a thin edge remaining.



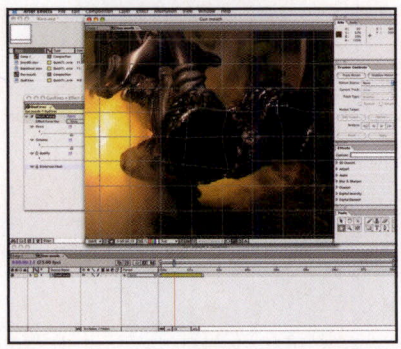
9 Go back a few frames, and apply Radial and Fast Blurs, and keyframe both to 0. Press T and keyframe Opacity to 100. Now go forward about six frames, and set the Blurs to 20, and Opacity to 0. Play the clip, and you'll see Eddie warp into a vanishing explosion.

Part 9: Mesh warp

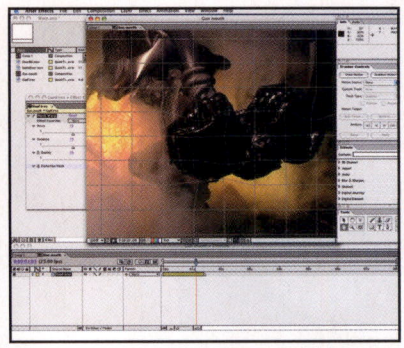
The Mesh Warp tool can be used to add lips to a gun or to change the expression on an actor's face...



1 Drop the Gunfires.mov into the timeline, and apply the Mesh filter. Set Rows and Columns to 15, and Quality to 10. Click the keyframe clock for the Distortion mesh.



2 Every few frames, use the crosshairs to pull the 'lips' of the gun in and out. Handles appear at each crosshair, and they have more of a distortion effect the longer you make them. Adjust to make the lips seem to ripple as they expand.



3 Towards the end of the clip, drag the crosshairs back to the centre, shortening the handles to purse the lips. Then move just three frames forward, and expand the lips slightly. This rebound always adds realism to an animation. ca-p

WE ARE APPLYING
DO YOU READ ME? INITIATE MASK.
REPEAT. INITIATE MASK.
PREVENT BLUE SPILL.
GRADE_F
WHITE_MIST
WE ARE
NOT STA
STAND BY. WIND. IMPOING TO ATTEMPT
A SAVING SHOTS. CODE BY TO INITATE
BACKGROUND LENGTH EMENTATION
OF 1600 PIXEL PLETE.
SCREEN STRI 137.

Compositing in After Effects

The Keylight filter in *After Effects* will help you put your characters in impossible places...

Compositing is an integral part of any modern film, and you'd be hard-pushed to find a major production that doesn't use blue-screen techniques in one way or another. Of course, there are different levels; *The Lord of the Rings*, for instance, featured a whole load of keying and compositing techniques, with Weta (the effects company on the trilogy) utilising Apple's *Shake* to integrate CG effects with real actors.

After Effects, like *Shake*, features the industry-standard Keylight keying tool. This tool, developed by the Computer Film Company is extremely powerful and robust, and has been used on a number of motion pictures. The power of the app, combined with ease of use, makes light work of lifting actors from one place and accurately putting them in another. All you need to do is make sure you've prepared your shots correctly and then *After Effects* will pretty much do the rest (with a little help from you of course). Turn over for our comprehensive tutorial...

All the components needed to complete this tutorial can be found on the cover CD in the Software\Tutorials\Tutorial files\Tutorial Files\All\Compositing folder.

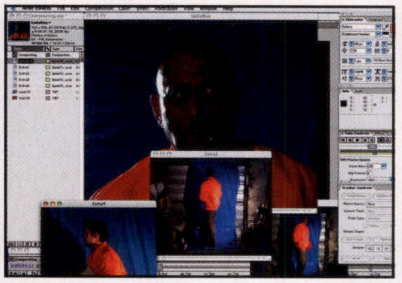
Part 1: Blue-screen techniques

Shoot your footage in front of a blue screen, then make the screen vanish with Keylight...

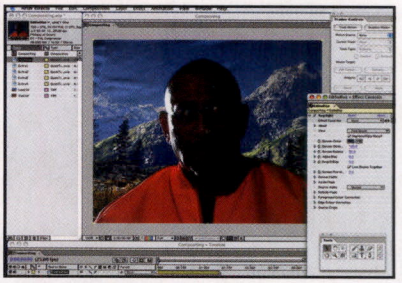
The screen

You can create a blue screen out of a blue bedsheet, or even a roll of blue paper. Whatever you choose, test it before you get your actors on set, because you may find a particular material too grainy or dark. The brighter the blue the better. For full-body shots you'll need a large screen that covers the floor as well.

1 Shoot your actor in front of a smooth, well-lit blue screen. Make sure the actor is some distance in front of the screen, to prevent blue 'spill'. Use bright lights, but think about the final shot to determine the exact style of lighting.



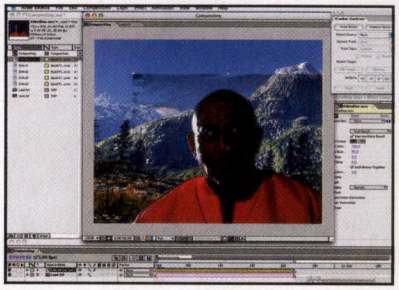
2 Create a New Project in *After Effects*, and a New Composition. Import your footage; in this case, the clips EddieBlue and the Extras clips from your cover CD. Also import the Land.tif background, and drag this to the timeline. Drag EddieBlue onto the next layer.



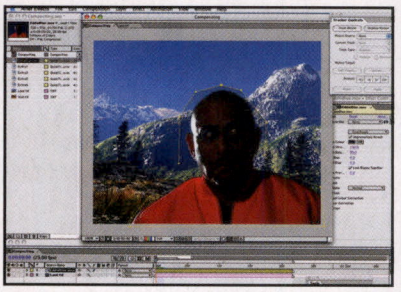
3 Apply Effects>Keying>Keylight. Use the Screen Colour Eyedropper to select a point on the blue screen. Choose the point that appears to be the average blue, rather than a particularly bright or dark spot. The blue will almost completely vanish, revealing the background.

Part 2: Keying out

Refine your key with masks and adjustments, to make the results as smooth as possible...



1 Use the Arrow tool to drag Eddie into the bottom right-hand corner. You can also resize him, either by dragging on the corner points or by pressing S to bring up the scale parameters in the timeline and dragging the numbers to a new size.

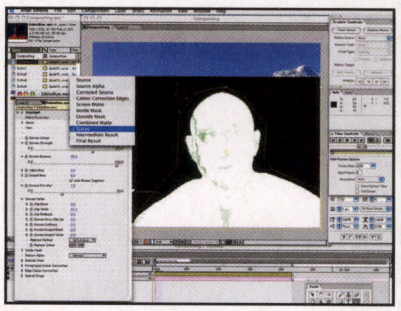


2 To make life easier on Keylight, draw a mask around Eddie. Select the Pen tool, and click around him to create the mask. If you need to make adjustments, use the Convert tool to change the points so they can be dragged to a new position.

3 In the Keylight settings, adjust Screen Strength to 137, to remove more blue. Also set Screen Balance to 95, the ideal setting for most blue screens. Most of the blue should vanish, but if you watch the clip, you'll see that the edges flicker.

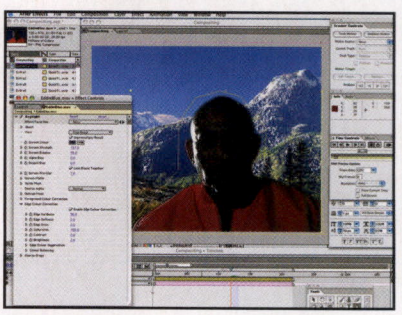
Part 3: Fine tuning

You can now make changes to colour and lighting, to place your character in a new environment...



1 In Keylight, change the View menu to read Status. The Black areas show where the blue has been keyed out; white areas show the foreground. The edge between the blue and the black should be grey. Set White Clipping to 24.

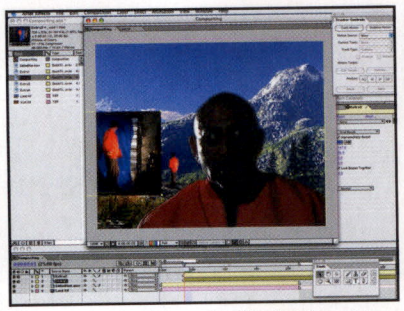
2 Change View back to Final Result, and in Screen Matte, set Screen Softness to 13. In Foreground Colour Correction reduce Saturation to 50. Adjust Brightness and Contrast, until Eddie looks like he's being hit with the same light as in the scene.



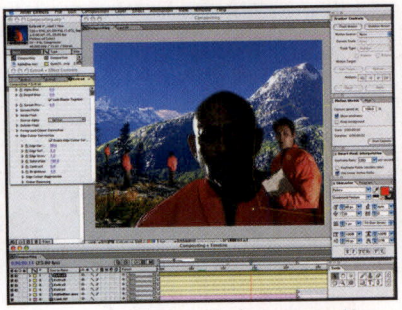
3 In Edge Colour Correction, change the Brightness to 2.0. If you prefer some light to spill softly around your actor, you can change the other parameters, but if you want as tight a matte as possible, you can make further adjustments.

Part 4: Background actors

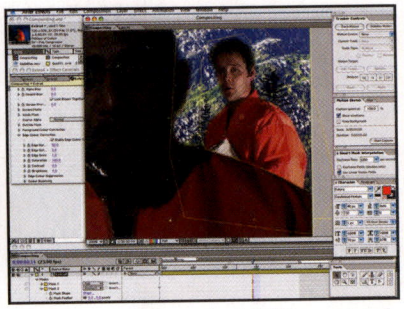
Adding extras to the background takes even less time, because your keying can be less fussy...



1 One by one, drag each of the first three Extra movies to the composition and key out the blue screens with Keylight. Also adjust the colour saturation. Your work doesn't need to be as exacting as before, because these figures will be shrunk considerably. Scale down each one, and position them in the background.



2 When you drag Extra4 to the screen and key out the blue, you can position him behind Eddie. The problem here is that Eddie's edge glow looks unrealistic in front of the other character. To solve this, drag Extra4 to the uppermost layer.



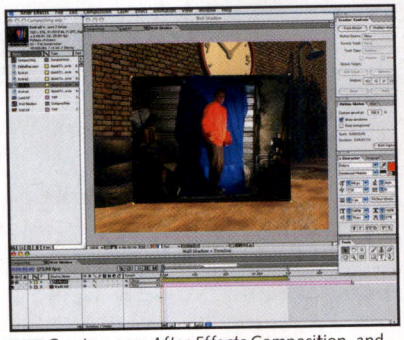
3 Change your Comp view to 200 per cent, and use the Pen tool to draw a mask around the background actor, with the lower mask edge matching Eddie's jacket as closely as possible. Press M to bring up the mask parameter, and set the mask to Intersect. Feather the mask edge by 5 pixels, and you're done.

Part 5: Shadowland

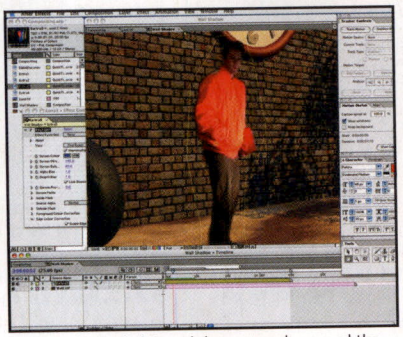
When you place a character in a well-lit environment, you'll need shadows to achieve realism...

Contrast

DV is a brilliant format, but even a product as good as Keylight struggles with the relatively low-resolution of DV footage. If you place a character over a dark scene, keying problems won't show. But if you composite somebody into a bright scene, edges will either be jagged or transparent. The creative solution is to add an overall glow or mistiness to the finished shot, to hide imperfections in the matte.



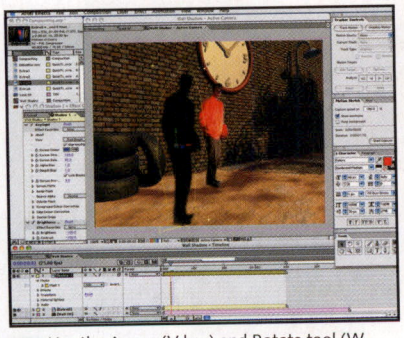
1 Create a new *After Effects* Composition, and import the Wall.tif background. Drag this to the timeline, then put the Extra3.mov clip above it in the timeline. Resize the clip, so the actor matches the scale of the scene.



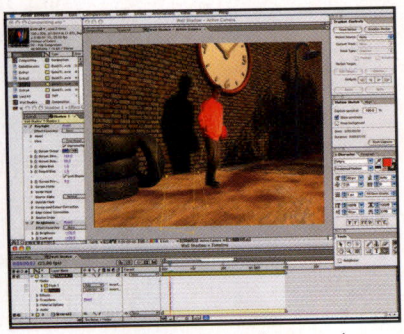
2 Apply Keylight, and draw a mask around the actor, to cut out the majority of the blue screen. When drawing masks, always check that the actor never moves into the mask itself. When that happens, you'll need to keyframe the mask shape, and change it throughout the clip.

3 Select the Extra Layer and go to Edit>Duplicate. This copies all the layer's properties, including the keying filter. Press enter, then rename the clip by typing Shadow1. Click the cube icon to the right, to make this a 3D layer.

4 Drag the Shadow layer slightly to the left, then apply Effect>Adjust>Brightness and Contrast. Drag both settings down to -100. This shape approximates a shadow, and will move in time with the actor.



5 Use the Arrow (V key) and Rotate tool (W key), to shift the shadow layer in 3D space. Ignore the shadow's legs, and position it on the wall so that it appears to be a shadow cast from the actor's upper body. Expand the layer slightly, for a larger shadow.



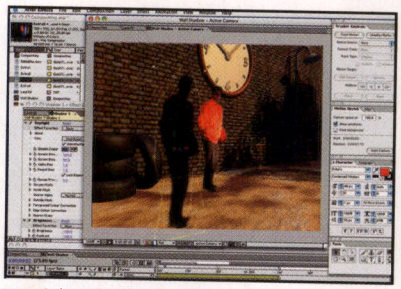
6 Use the Pen tool (G key) to draw a mask around the shadow's legs. Make sure you use the line between the wall and the floor to draw the upper part of this mask. Press M to reveal mask properties, and set the mask to Subtract. This cuts the shadow off exactly where it meets the ground.

Part 6: Doubling up

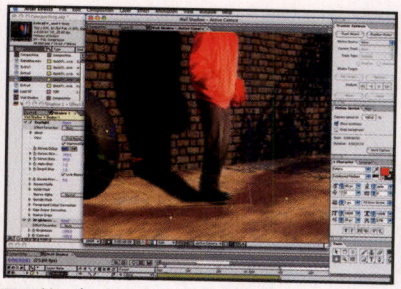
By duplicating the first shadow layer, you save yourself having to mask all over again...

Blue light

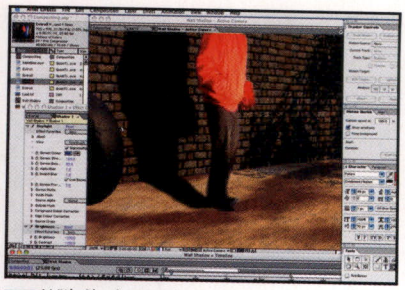
Lighting a blue screen is a fine art, which Hollywood experts still struggle with, but there are some basic principles. Make sure there are no shadows on the screen. Make sure the screen is bright but still looks blue, rather than washed out. Try to put a light behind your actor, to add a rim of brightness which helps prevent blue spill around the edges.



1 Select the Shadow1 layer, and choose Edit>Duplicate. The new layer will automatically be named Shadow2. Press M, and set the mask to Intersect. This causes the upper body to disappear, leaving the new shadow legs.



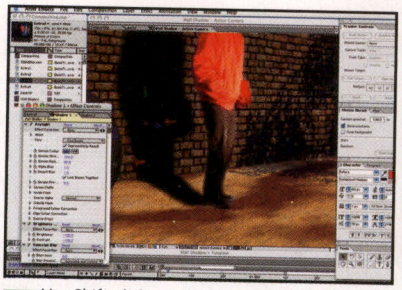
2 Use the Arrow and Rotate tools to reposition the leg shadow, so that it's aligned with the floor and cast directly between the actor's legs and the wall shadow.



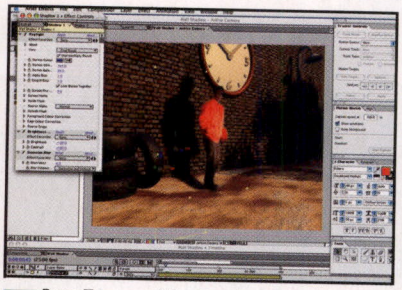
3 With Shadow2 selected, draw a mask around the actor's feet, and set the mask to Subtract. A Mask Feather setting of 3 should help to soften this. The shadow now appears to be cast behind the actor's legs, rather than over them.

Part 7: Soft shadows

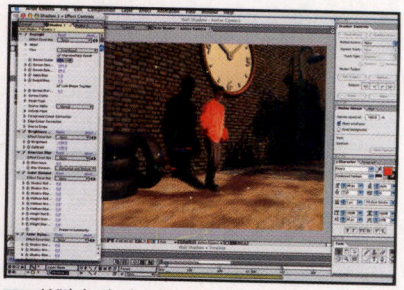
The final blur and colour effects make the shadow look so real that nobody will suspect it's a fake...



1 Use Shift-click to select both Shadow layers, and apply a Gaussian Blur, set to a Blurriness of 6.0. If your scene contains hard light, you might want to reduce this. If it's a very hazy scene, you could soften it even further.



2 Press T to reveal the Opacity settings for both clips, and reduce to somewhere between 70 and 80. If there's another shadow in the scene, use that as a reference, and try to recreate its look.



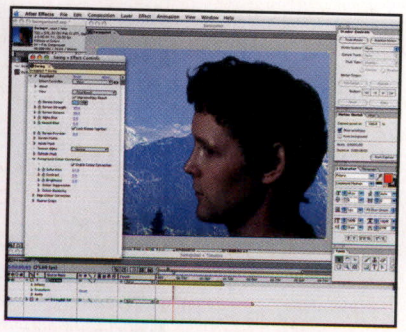
3 With both clips selected, apply Adjust>Colour Balance, and attempt to replicate the blue tint seen in the tree shadow on the right. The best way is to increase the blue shadow at all levels. When that's done, you can output the scene and watch the shadow move with your actor.

Part 8: Swing shot

Composite shots are usually stationary, so you can add realism by simulating a fast camera move...

1 To create the impression of the camera swinging around your actor, you'll need to create a distant background image at least 1600 pixels wide. You can create this in *Vue Pro*, or take pictures with a digital camera.

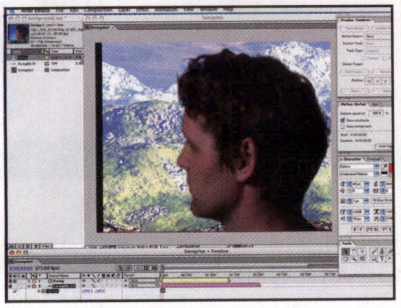
2 Shoot your actor in front of a blue screen. The camera move would be impossible, unless you have a huge curved blue screen. Instead, sit the actor to spin on a swivel chair. This means your lighting is far from realistic, but the shot is so fast that nobody will notice.



3 Import the foreground and background to *After Effects* – in this case, use SwingBG.tif and Swing.mov. Apply Keylight to the clip, and complete all compositing work before moving on to the next stage.

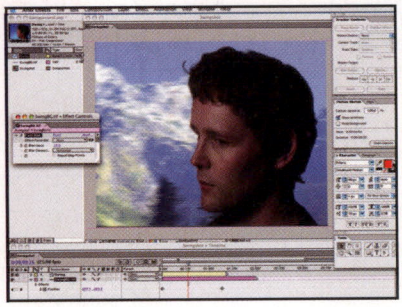
Green screen

Blue screens are ideal if you're shooting indoors, but if there's any daylight in your scene (which appears blue to the camera) it will ruin your composite. With a green screen, you can shoot outdoors to help replicate natural lighting. The choice usually comes down to which screen is available, and the colour of your actor's eyes and clothes – if your actor has blue eyes, the software may key them out unless you draw a mask around them.



4 Go to the start of the clip. Use the Arrow tool to drag the background image as far to the right as it will go, while keeping it on screen. Press P to reveal Position parameters, and click on the keyframe clock.

5 Go to the end of the clip, and Shift-drag the background layer to the far left. If you play through the clip, you'll see the background moves behind the actor, giving the impression of a spinning camera move.



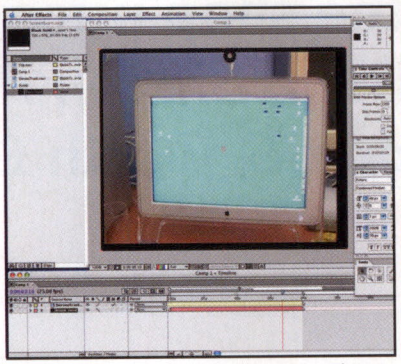
6 Add a Fast Blur to the background clip, set to Horizontal only, and a Blurriness of about 25. If you want to show the camera coming to a halt, you'll need to keyframe the background, and reduce the Blurriness to O in the last few frames.

Part 9: Screen burn

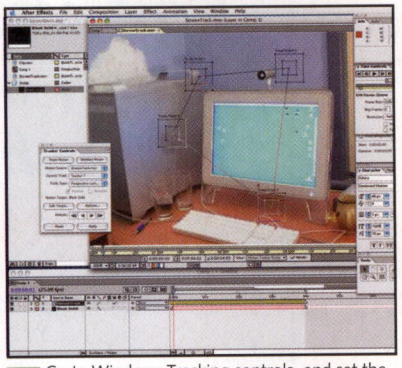
Filmed TV never looks realistic, so if you want to show on-screen footage, use a screen 'burn in'…

Edge chatter

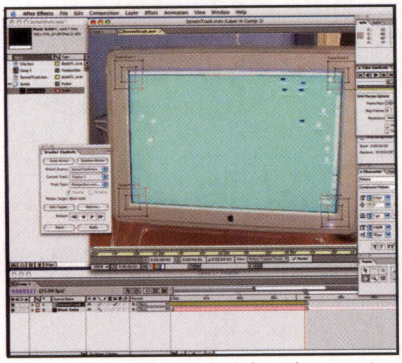
When you've made a few adjustments to your footage, and think it looks like a good matte, press the spacebar and watch a few frames in motion. Although stationary frames may look fine, when you run a second or two of images, you may see all sorts of problems, such as jagged 'edge chatter'. Keep making fine adjustments, and always watch the results in motion before moving on to the next shot.



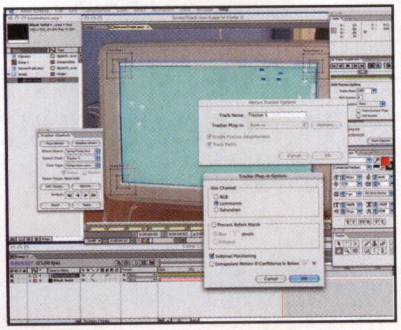
1 In a new *After Effects* project, import Clip.mov and ScreenTrack.mov from your CD. Drag ScreenTrack.mov to the timeline. In Layer>New> Solid, create a new black solid at Composition Size. Drag this beneath the ScreenTrack layer.



2 Go to Window>Tracking controls, and set the Motion Source to ScreenTrack.mov. The Track type should be Perspective Corner Pin, and the Motion Target should be your Black Solid.

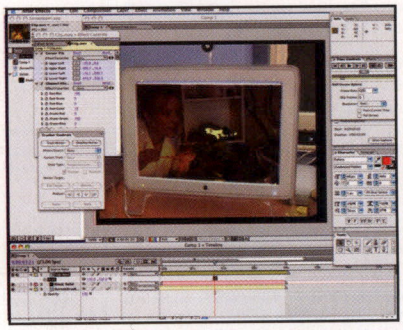


3 Go to the end of the clip, where the screen is largest, and drag the crosshairs to each corner of the screen. Make sure you click inside the crosshair frames, but just to one side of the crosshair itself. Zoom in, to make sure you're getting the exact corners.



4 In the tracker controls, click Option and check Enable Feature Adaptiveness and Track Fields. Click the additional Options button and check Subpixel Positioning and Luminance. OK everything, then Click the track backward button, and wait until the clip has been processed.

5 Click Apply. Now drag Clip.mov to the timeline, and change the Edit Target settings to Clip1.mov, and press Apply again. Go back to the Comp window. Both the Black Solid and the Clip should now follow the track points.



6 The Black Solid makes it possible for you to reduce the opacity of the Clip, to give it extra realism. If the image appears to be 'stuck on' rather than genuinely on-screen, you can also add colour and blurring filters. **ca-p**

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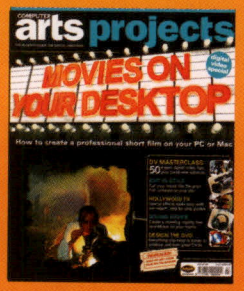

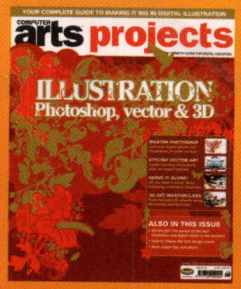

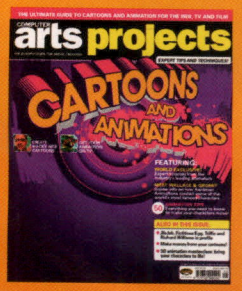

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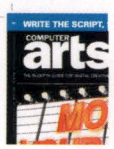

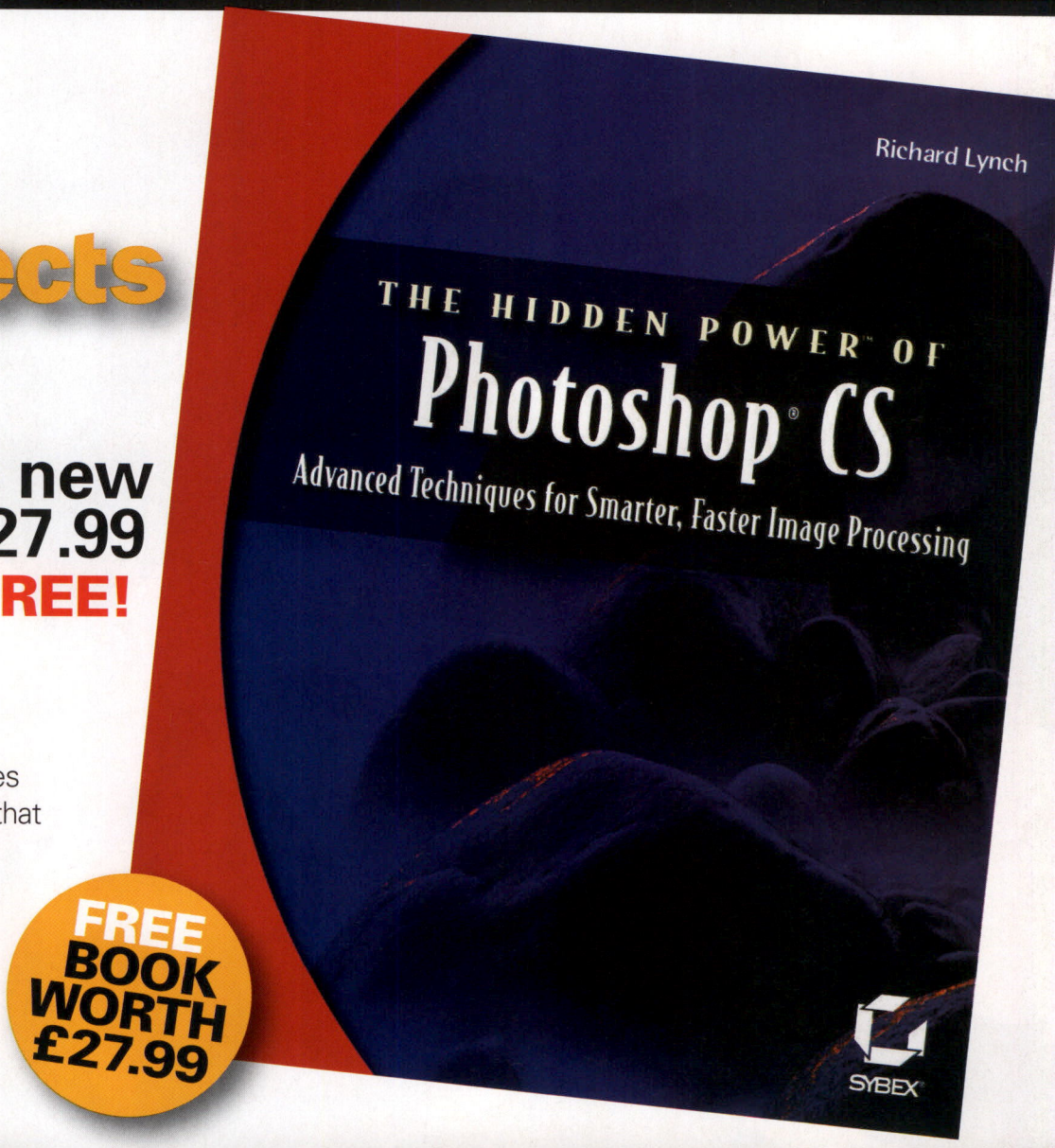

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Titles that work

Your titles are going to be the first thing your audience sees (in most cases), so make sure you get them right. Over the page, we investigate six classic title sequences – take inspiration from the best and then create your own in *After Effects* with our fantastic tutorial...

Some of the best title sequences conjure up the atmosphere of the film and even tell part of the story. Make sure that your titles are relevant, well-designed and engaging, otherwise you may lose the audience before the movie has even started.

Over the next pages, we show you some of the greatest title sequences of all time, and then we bring you the low-down on creating fantastic titles, which include 3D effects, for your own short film.

Remember to pay particular attention to the timing and structure of your titles, because this alone could make or break your movie. So, simply take our expert advice and your titles could really stand out from the crowd.

All the components needed to complete this tutorial can be found on the cover CD in the Software\Tutorials\Tutorial files\Tutorial Files\All\Titles folder.

MULHOLLAND DRIVE

DIRECTOR: DAVID LYNCH

YEAR: 2001

What could be more ordinary than a street sign? By using the familiar, David Lynch prepares us for the extraordinary events that lie ahead. Throughout the title credits of *Mulholland Drive*, the street sign fluoresces and flickers, as though car headlights are approaching. We're already wondering who's coming closer; the director's already got us guessing. As the rest of the credits appear, each name flickers and flares briefly, in the same way as the Mulholland Dr. road sign. Given the context of the opening scenes – a bizarre jitterbug contest and some heavy breathing over a brightly coloured bed – the heightened realism makes us know that all is not well in Hollywood.

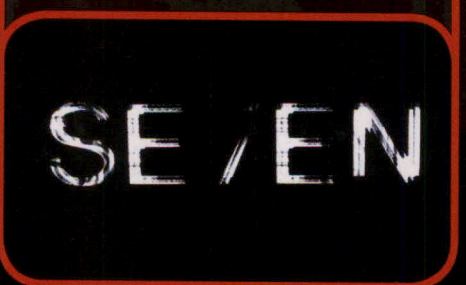
Mulholland Drive Copyright © 2001 Universal Studios

SE7EN

DIRECTOR: DAVID FINCHER

YEAR: 1995

The ultimate in desktop titles, *Se7en* was talked about for months after it came out, not just because of the secret thing in the box at the end, but also because of the stunning title sequence. The film came out at a time when titles had gone a bit Woody Allen – minimalist black on white – so an opening sequence that caught the spirit of the film before the first shot was more than welcome. The titles set up a sense of mystery, give the hint of a set-up, and imply great intelligence and complexity, as well as being beautiful. Following the success of *Se7en*, Fincher's title sequence for *Fight Club* goes the other way, showing the actors' names as briefly and small as was allowed by law.



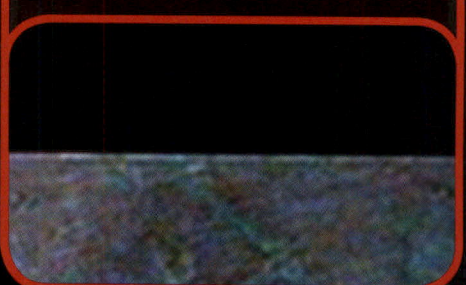
Se7en Copyright © 1995 New Line Cinema

MAGNOLIA

DIRECTOR: PAUL THOMAS ANDERSON

YEAR: 1999

Director Paul Thomas Anderson made the opening titles for *Magnolia* on his desktop computer. So the story goes. Several minutes into the film, when you're wondering what the film is about and when it's going to stop being a documentary, he unsettles you further with a rush of overlapping image quick-cuts, and gorgeous stop-motion animation of magnolia flowers. The intention is to speed up your thinking. Anderson is telling you that you'll need to wake up and pay attention if you're going to enjoy this film. And the level of detail also suggests that every tiny element in the film has been thought about. Watch the film multiple times and you'll see hundreds of relevant details in the far background.



Magnolia Copyright © 1999 New Line Cinema

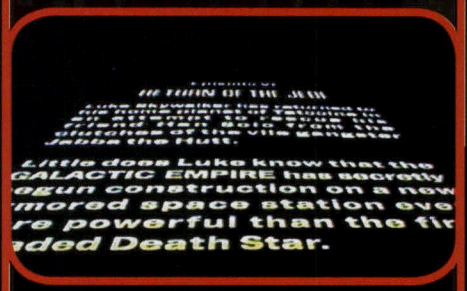
STAR WARS

DIRECTOR: GEORGE LUCAS

YEAR: 1977

These days when the 'opening crawl' of a *Star Wars* movie is created, computers are used to add a slight wobble to the text. The reason for this is that when the opening credits were created for the first film, somebody really was rolling a big piece of paper underneath the camera, resulting in a natural wobbling effect.

In those days, they tried to hide the wobble, but now we'd miss it if it wasn't there. The *Star Wars* titles are memorable for their boldness, so why waste time setting up the story when you can just reveal the text on screen. George Lucas once said that displaying the title sequence in this way might encourage kids to learn to read. A noble thought, even if a little far-fetched.


Little does Luke know that the
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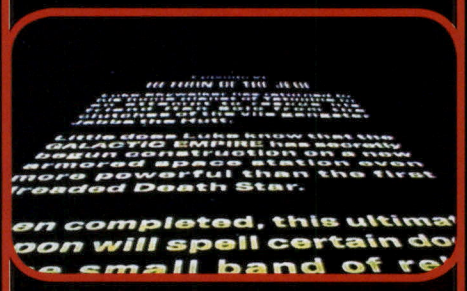
begun construction on a new
armored space station even
more powerful than the first
dreaded Death Star.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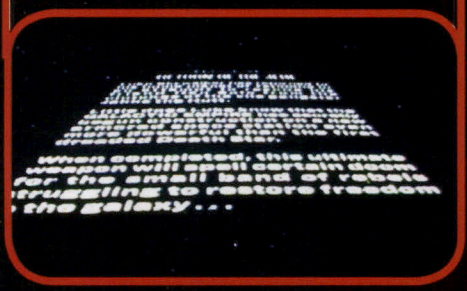

When completed, this ultimate
weapon will spell certain doom
for the small band of rebels
struggling to restore freedom
to the galaxy...

Star Wars Copyright © 1977 Lucasfilm, Ltd

ALIEN

DIRECTOR: RIDLEY SCOTT

YEAR: 1979

When you think of an *Alien* movie, you know what to expect. It's Science Fiction horror set in space. When the first movie came out, people would go to see films knowing almost nothing about them. You might turn up to see a major film without knowing who the stars were, because you had to rely on magazines for your information and they came out after the film had long since vanished. So films such as *Alien* needed to establish the mood of the film early on. By showing strange hieroglyphic alien text and misty lights expanding to fill the screen, you know that you might need to be afraid — and not of little green men in the back yard — and that there's a certain mythical grandeur to the proceedings.

Alien Copyright © 1979 Fox and its related entities

STAR TREK: FIRST CONTACT

DIRECTOR: JONATHAN FRAKES

YEAR: 1996

Glorious in their simplicity, the *First Contact* titles are aided by one of the most beautiful movie scores ever composed — a French Horn doing the *Star Trek* thing as underscore. We start with a blurred screen, which resolves into the titles, then fades. As one name fades off the screen, another appears as a bright blue blur. This creates the feeling of pulling back through the titles, which is exactly the effect the director wanted to achieve, because the opening shot has us pulling back from Picard's eye and zooming backwards through the massive Borg ship. One of the film's major themes is seeing things clearly, without prejudice, so there's some beautiful symbolism going on here.

Star Trek Copyright © 1996 Paramount Pictures

TURN OVER FOR TUTORIAL

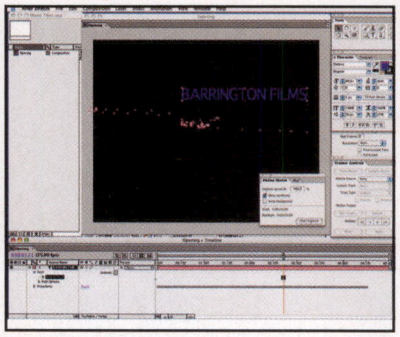
Part 1: Flashy text and a textured background

Create a smart introduction to your company, and a floating 3D background...

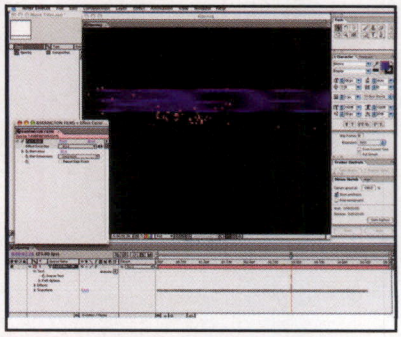
Text over film

Simple credits can be superimposed over the opening shots of your movie, just as they are with popular TV shows. Unless you're careful, this can have two negative effects. The first is that your titles will distract from the important action. Or, if the action is too interesting, nobody will read the titles. This is why it's more common for a title sequence to be a self-contained moment of film.

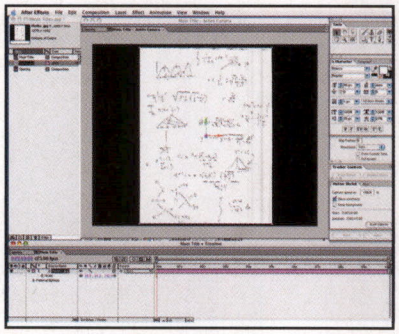
1 Create a five-second composition in *After Effects*, select the Type tool and click the Composition window. Type your chosen text. Click on the large square in the Character palette to launch the Colour Picker, and make the text blue. Adjust the size and style in the Character palette.



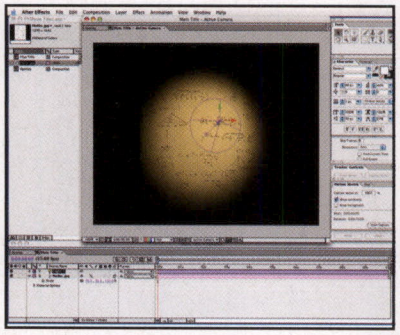
2 Select Motion Sketch from the Window menu. Click Motion Sketch, then draw the motion track in real time. Quickly drag the pointer from the far left, hovering in the centre of the frame for a moment, then drag it out to the right. Repeat this until you get the look you want.



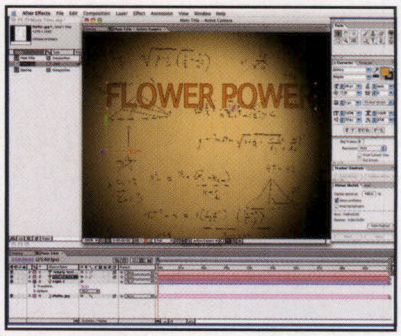
3 To add a flashy blur, go to the middle of the clip, choose Fast Blur, set to Horizontal with a Blurriness of 35. Click the keyframe clock. Go to the next frame and set Blurriness to 0. One frame later, set Blurriness to 25, then 0 a frame later.



4 Create a new composition for the Main Title. Import Maths.jpg, or scan a creased page of text. Drag the image to the timeline. Press S to bring up Scale and drag the setting until the image fits in the window. Click the 3D icon to make the layer 3D.



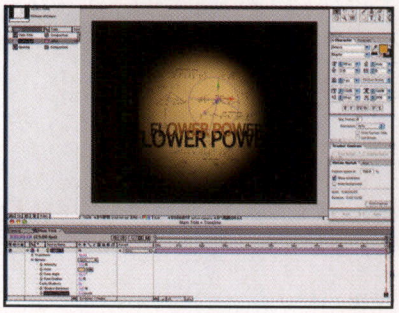
5 Add a light by choosing Layer>New>Light. Set Light Type to Spot, and launch the Colour Picker. Choose a light orange. Make sure that Casts Shadows is checked. Move the Light, or any layer, in 3D space by click-dragging the coloured arrows.



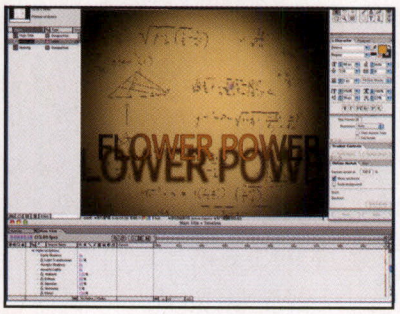
6 Choose the Text tool, click on the Composition window and type in the main title. Make the layer 3D. Although you could use white text, adding colour will help colour the shadow, so use the Character palette to select a dark yellow.

Part 2: Casting shadows

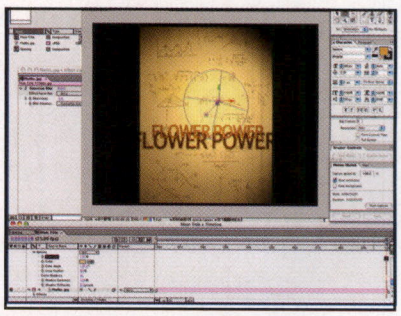
Switch on shadow casting to create an instant sense of depth...



1 Expand Material Options for the Flower Power text layer, and set Casts Shadows to On. Set the Maths.jpg Material Options so that Receive Shadows is On. Raise the titles slightly above the Maths layer by click-dragging on the blue Z arrow.



2 To colour the shadow, set the Text layer's Light Transmission to 50 per cent. Go to the Light's Material Options, ensuring that Casts Shadows is on, and set Diffusion to 8.



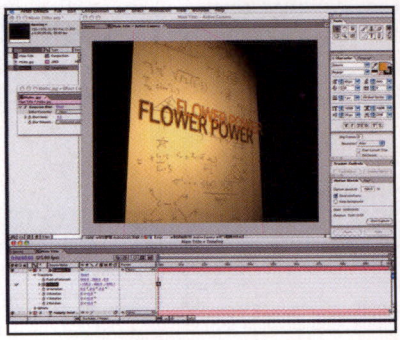
3 To remove the pixelated look of the Maths layer, add a Gaussian Blur, set to 3.0. Change the Light to Intensity 130, Cone Angle 125, and Cone Feather 35. This creates a hotspot that fades out, giving a sense of space and texture.

Part 3: Camera action and text wiggling

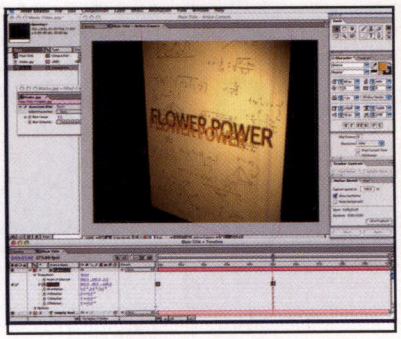
By flying a virtual camera through 3D space, you give a swooping flow to your composition...

Theme and image

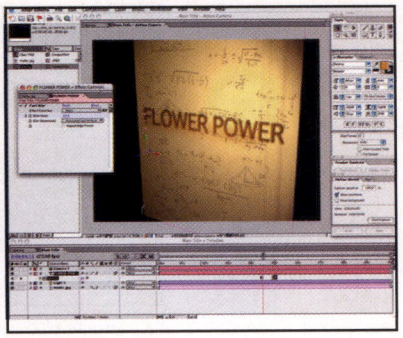
If you can tie your titles to the theme or image of your movie, you should do so. Woody Allen's approach is to put up black-and-white titles one after the other, probably because he makes so many movies that thinking up title sequence would be too time-consuming. But if you have the time, move, colour or shape your titles in a way that reflects a central idea or image from your film.



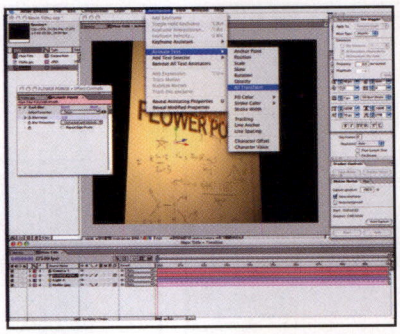
1 Go to the beginning of your sequence and choose Layer>New>Camera, to add a camera with the default settings. Expand the camera's parameters, and set the Position co-ordinates to -155, 480, -590. Adjust your text layer if required.



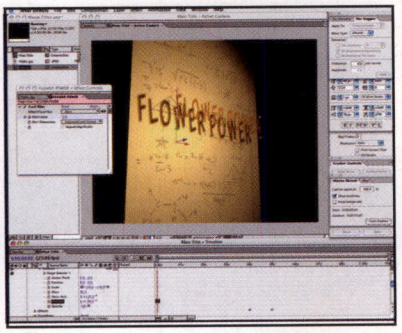
2 Click the Position keyframe clock, and move five seconds into your composition. Now change the Position co-ordinates to 800, 45, -685. This creates the entire camera move – you can add further keyframes for more complex movements.



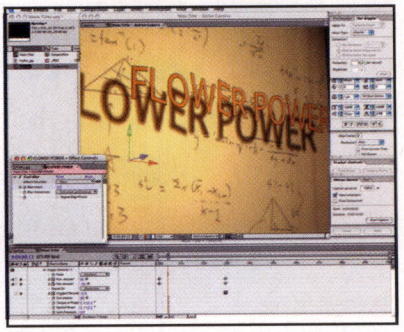
3 Add a Fast Blur to the text at four seconds, and Blurriness of 0. Half-a-second later, press T and adjust Opacity to 100. Half-a-second later, set Blur to 100. A few frames later, reduce the Opacity to 0. The text blurs out before the shadow.



4 Go to the beginning of your composition, choose the Text layer, and select Animation>Animate Text>All Transform. This enables you to change all the text's parameters, while giving The Wiggler (top-right corner) control over how much change is applied.



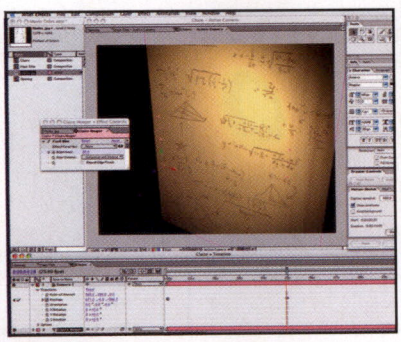
5 Expand the Text layer's parameters, and open Animator 1. Adjust Skew to 30, Skew Axis to 20, and Rotation to -30. Although the effect on the text is extreme, The Wiggler uses this as a maximum, which reduces to no effect over a couple of seconds.



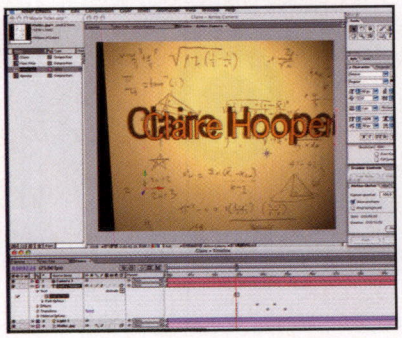
6 Remove the Range Selector, and choose Animation>Add Text Selector>Wiggly. Set Max to 100, Min to -100, and Wiggles Per Second to 10. Keyframe all settings. Three seconds into the composition, change Max and Min to 0. The main title composition is now complete.

Part 4: Text cycles

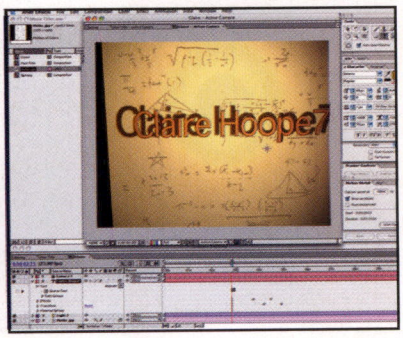
Source Text enables you to flash through a jumble of letters in a matter of moments...



1 Create a new composition, and set up a similar shot as before, but from a different angle. Set the camera starting point to -105, 466, -520, and the end point, five seconds later, to 670, -6, -545.



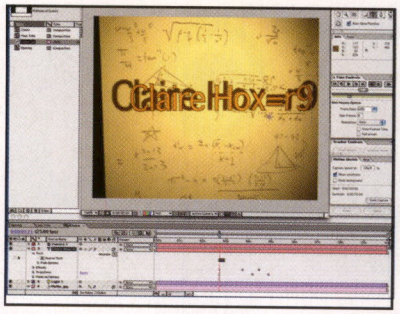
2 Expand the Text parameters and keyframe the Source Text three seconds into the footage. All changes to the text will be made earlier in the timeline, so that when the three-second mark is reached, the name is fully legible.



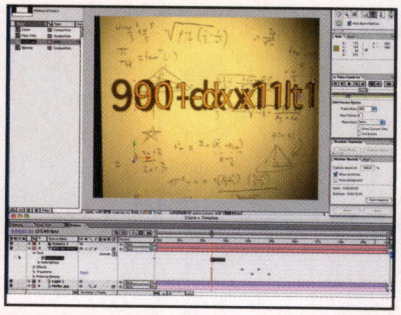
3 Go back one frame, and change the last letter in the name to a random number. The Source Text doesn't change the text smoothly, but instead at the point of each keyframe, so a rapid series of changes looks like the cycles of a fruit machine.

Write on

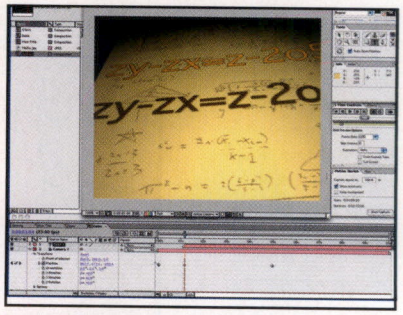
Although *After Effects*' titling tools are powerful, you can also use the Paint Brush, set to Write On, so that your image is drawn over several seconds. Apply the Find Edges filter and you can turn this paint into neon-glowing tubes of light. It takes some skill to draw accurate titles, but the results are usually worth the effort.



4 Keep moving back a frame at a time, changing one more letter each time. You should also randomly change the letters to the right of this point. This keeps the text rotating, except where a correct letter has locked into place.



5 Go to the beginning of the composition and change the text to another random string of letters. Click and drag around the keyframes made previously, so you can drag them as one to any point in the sequence. This gives you control over the exact moment when the cycle begins.



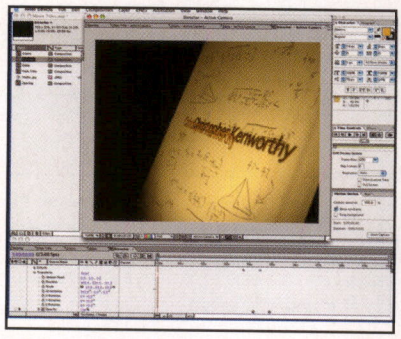
6 The sequence is now complete, so you should repeat this for any other names or text that need to be added. To give variety, choose more extreme camera angles, and greater distance, to create a range of speed and movement.

Part 5: Drop text and spin layers

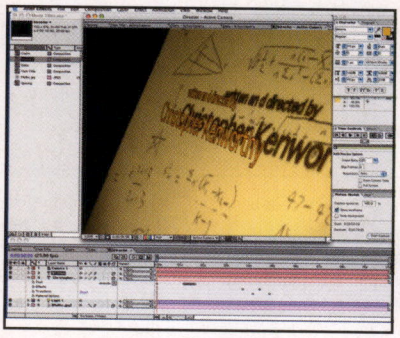
When using multiple lines of text, you can make each come into view in a different way...

Credit where it's due

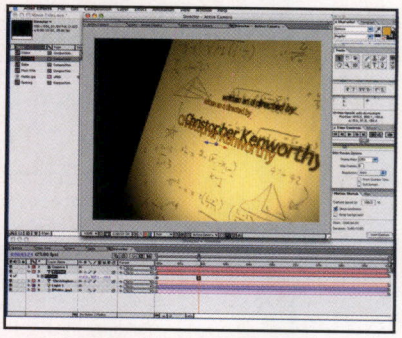
A current trend in Hollywood is to get straight into the movie, without any front credits. This means that the first words after the final shot are the movie title, followed by the director. The theory is that you get to the action more quickly, but good titles can help establish the mood of a film. Use them as an opportunity to put the audience in the correct mood for the opening scene.



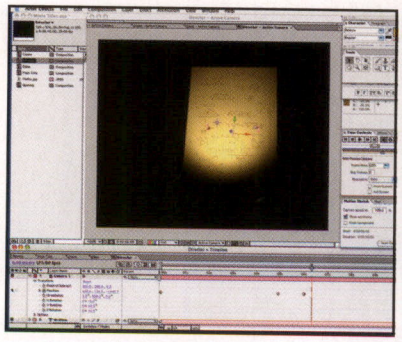
1 Create a similar composition to before, and type in the director's name. This time, to make the background appear at a more extreme angle, change the first Orientation setting of the Maths layer to 320. Adjust the text so that the entire name and shadow are visible.



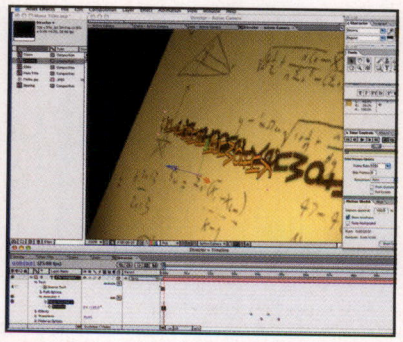
2 Create a new Text Layer saying 'written and directed by.' The text should be smaller than the director's name, but should be the same in terms of appearance and shadows. Use the 3D arrows to drag this text out of view at the top of the composition.



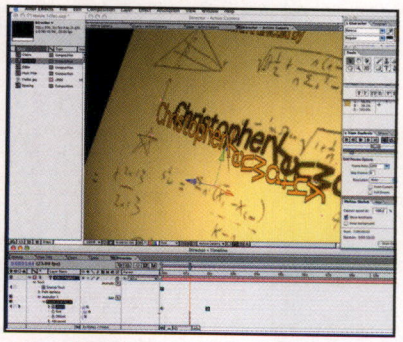
3 Click the keyframe clock for the Text layer, and then move two seconds forward. Drag the text down to its final position. It will now slide down the page and into position in a couple of seconds.



4 Move to the right of the five-second mark, where all text and shadows have vanished, and adjust the camera settings so that the Maths layer appears to rotate out of view. This distancing and rotation match the opening shot of the movie.



5 Go back to the start of comp, to work on the director's name. Select the Text layer and choose Animation>Animate Text>Rotation. Expand the parameters and set Rotation to -100.



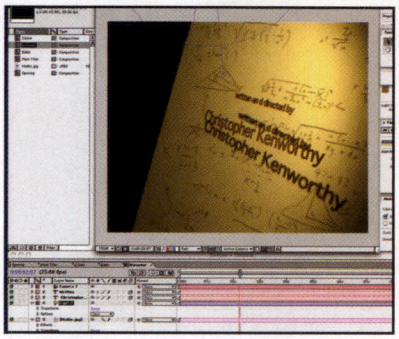
6 Keyframe the Range Selector at 0, then move two seconds into the composition, and set the Range Selector to 100. Watch through the sequence, and you'll see the letters of the name roll into place one by one.

Part 6: Altered images

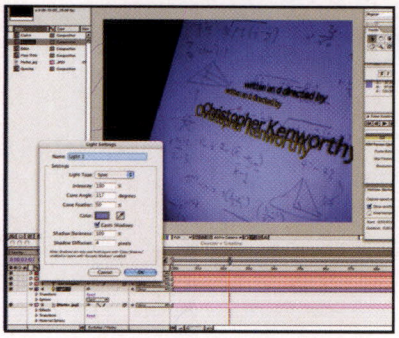
Changes to light and shadow can be animated over time...

Clarity

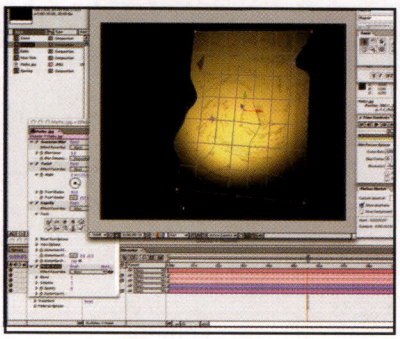
Modern software tempts you to apply lots of filters, camera moves and lights when creating title sequences, but remember that clarity is more important. Even scratchy, flickering titles pause for a moment, so that each name is completely legible.



1 To give shadows a more dramatic appearance, you can shift lights and text layers over time. The closer the light is to the text, the more shallow the angle. Experiment with small camera moves and large lighting moves.



2 *After Effects* enables you to animate just about any parameter, so don't feel limited to using one colour for your light. As well as changing brightness, and the way shadows are cast, you can change the light hue over the course of a comp.



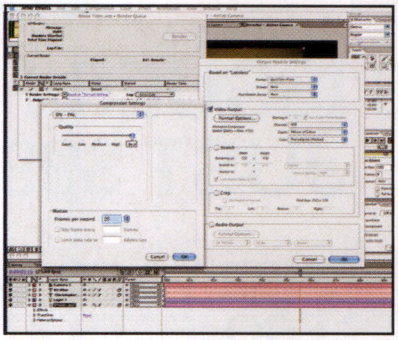
3 You can add filters and distortion to any layer, but be careful not to include so many changes that the text becomes unreadable. Although swooping moves and colour shifts look good, your text must always be clear and legible.

Part 7: Output and end credits

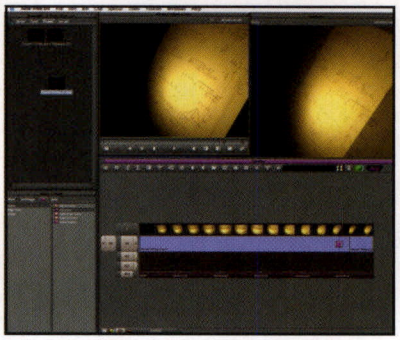
Render everything at once, import to your editing software and add rolling end credits...

Word layers

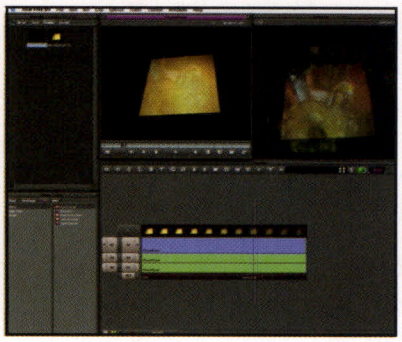
Combine a few layers of image and text and you can create some of the most striking titles. Type in your text and place it over a few combined, motion sketched images from your film. Experiment with different blending modes so that images show through the text, and vice versa. Merge everything together by keyframing opacity, and you can create a sequence similar to that from *Se7en* in just a few minutes.



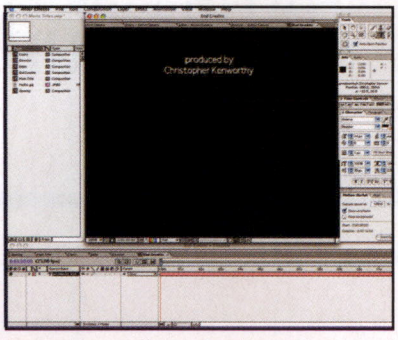
1 Export by choosing each composition in turn, and select Make Movie. Render settings should have a framerate of 25. Click the Output Module Settings and set Format Options to DV Pal, Best, and 25 frames per second.



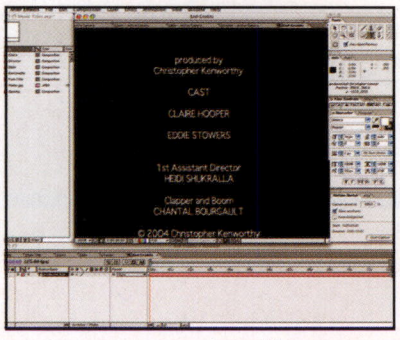
2 Import the rendered footage into your editing software and edit the sequence. You can make hard cuts between each section, or cross dissolve, depending on the effect you want. Note that it's easier to match music when there are hard cuts.



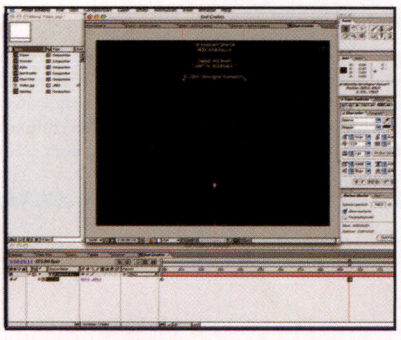
3 The final title sequence can be cross-dissolved into the opening shot of the movie. This makes a clear link between the shrinking rotation of the maths sheet and the spinning of the blender. Titles should always relate to the theme of the movie.



4 To create scrolling end credits, use the Text tool to Option-drag (Mac) or Alt-drag (Windows), to create a boundary box in which to type your text. Use the Paragraph tab to centralise this text.



5 If you type more text than will fit into your boundary box, a small plus sign appears in the bottom right-hand corner of the box. Click this to expand the box to a larger size. Long credits will create a large layer, so you might find it easier to work with small type that can be expanded later.



6 Drag the whole boundary box off the bottom of the screen and keyframe its position. Move ten seconds into the Sequence, and Shift-drag the frame off the top of the screen. If the credits roll too fast, you can slide the final keyframe further to the right. ca-p

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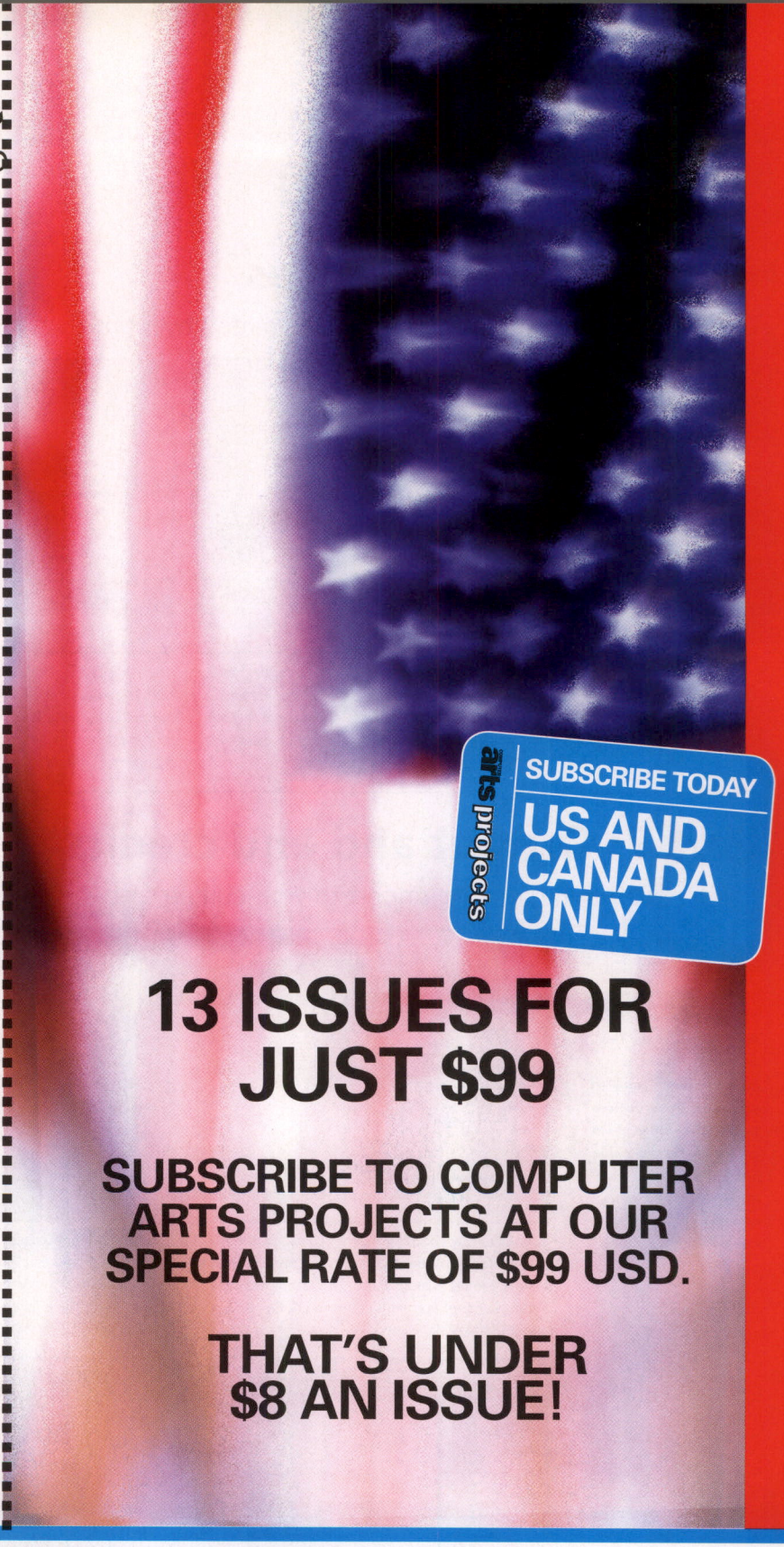
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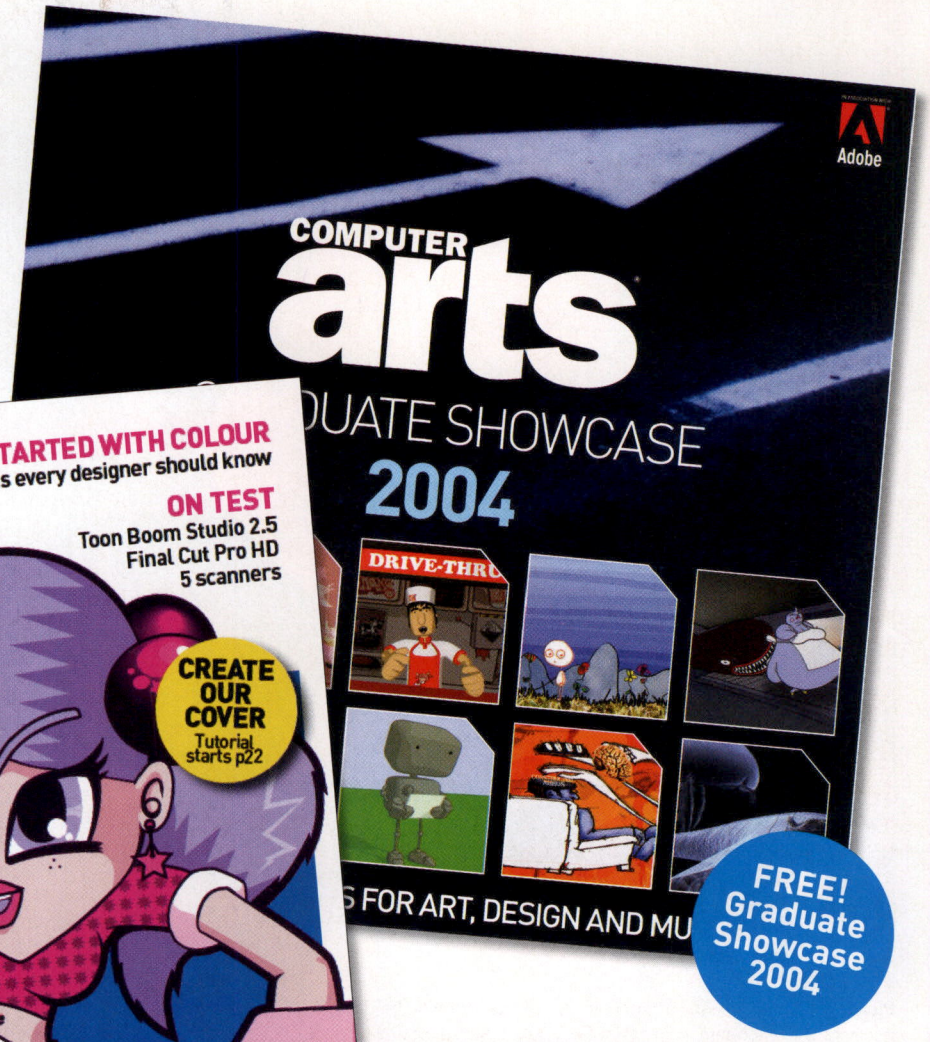

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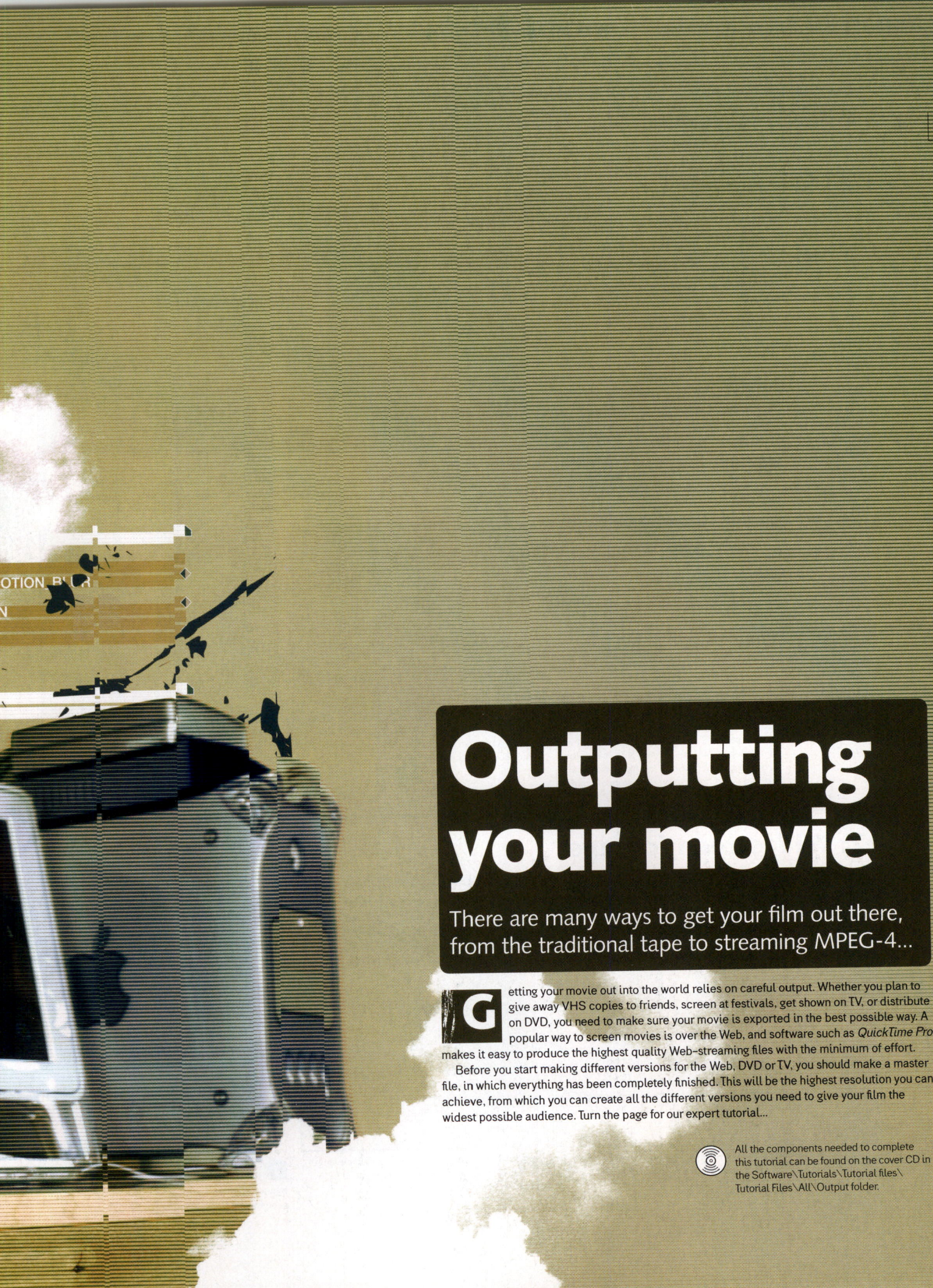


Outputting your movie

There are many ways to get your film out there, from the traditional tape to streaming MPEG-4...

Getting your movie out into the world relies on careful output. Whether you plan to give away VHS copies to friends, screen at festivals, get shown on TV, or distribute on DVD, you need to make sure your movie is exported in the best possible way. A popular way to screen movies is over the Web, and software such as *QuickTime Pro* makes it easy to produce the highest quality Web-streaming files with the minimum of effort.

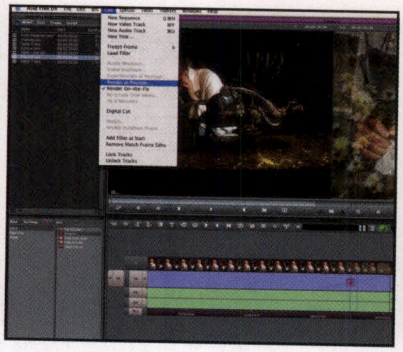
Before you start making different versions for the Web, DVD or TV, you should make a master file, in which everything has been completely finished. This will be the highest resolution you can achieve, from which you can create all the different versions you need to give your film the widest possible audience. Turn the page for our expert tutorial...

All the components needed to complete this tutorial can be found on the cover CD in the Software\Tutorials\Tutorial files\Tutorial Files\All\Output folder.

Part 1: Master output

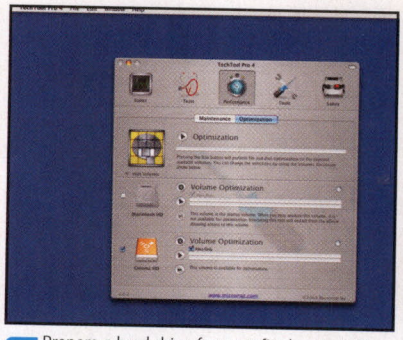
With all effects shots complete, assemble your final movie...

1 Create a New Bin in *Avid Free DV*, and call it Effects Shots. Import all your effects work generated by *After Effects* and edit these shots into your sequence.

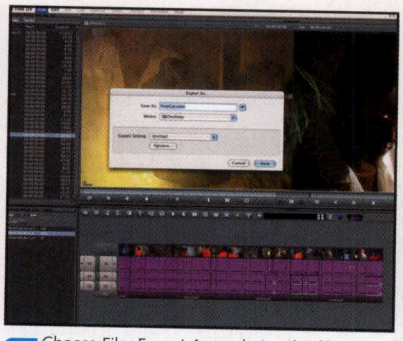


2 You'll need to render any effects or transitions that have been created in *Avid Free DV*. Click on the effect in the timeline, and go to Clip>Render at Position.

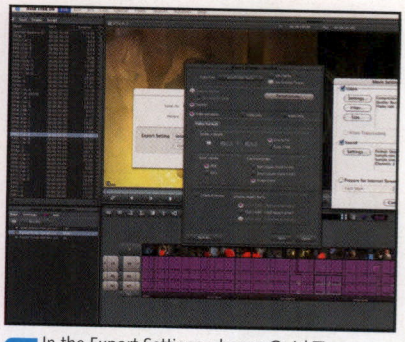
3 Watch through your film one last time, to make sure everything is in sync and that there are no blank frames where effects clips have been edited in.



4 Prepare a hard drive for your final output. If you have the software, perform a defrag and optimisation of the disk. When you create output directly to camera it helps if the file is all in one place on a hard drive, to prevent dropped frames.



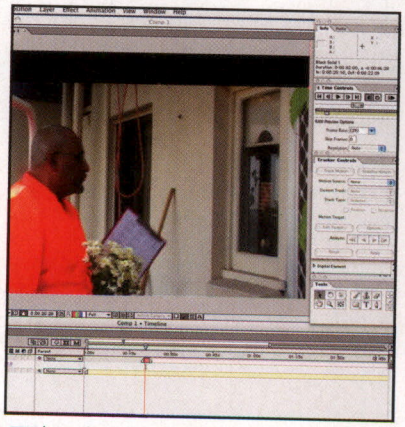
5 Choose File>Export As, and give the file a name. Leave the dropdown menu on Untitled, but click the Options button.



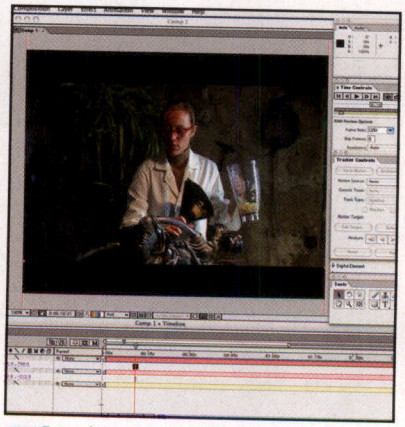
6 In the Export Settings, choose QuickTime Movie, and check Use Enabled Tracks. Video and Audio should be selected, and the width x height should read 720x576. Click Format Options, and set QuickTime Movie to DVPAL, at 25fps.

Part 2: Widescreen footage

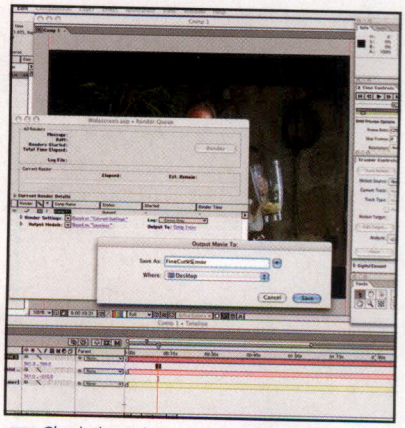
To create widescreen footage from the square footage you shot, apply a mask...



1 Import your newly created movie file into *After Effects*. Create a new Solid, set to black, and drag this to Position 361, -212



2 Extend this Black Solid to the sequence length and duplicate it. Drag the second solid to position 361, 788.



3 Check through, to make sure the mask has covered no vital images. If it has, you can move the movie file underneath the mask. When everything's ready, output a finished Master file.

Part 3: Output to tape

The movie you export to tape will need colour bars and a countdown...

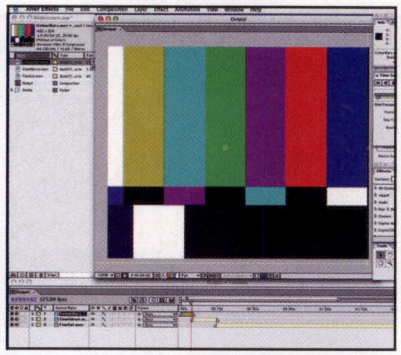
Back-up

When you've finished outputting your film, burn a copy to DVD as a file, not as a movie. It might sound paranoid, but it's wise to store at least one copy off-site. There are many stories of filmmakers who've been robbed, and their finished film was taken with the computer.

Clearing out

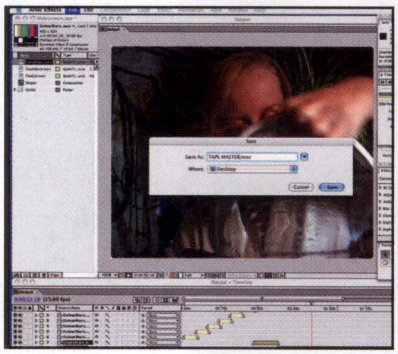
When your project is well and truly finished, you should clear all the un-needed movie clips and render files from your hard drive. Wait until you've made multiple back-ups, but then clear everything out.

1 Import your master movie file and drag it to the right in the timeline, so you can add colour bars and a countdown before the movie itself. Import the movie Countdown.mov from your CD, and Shift-drag so that the last frame exactly matches the first frame of your movie.

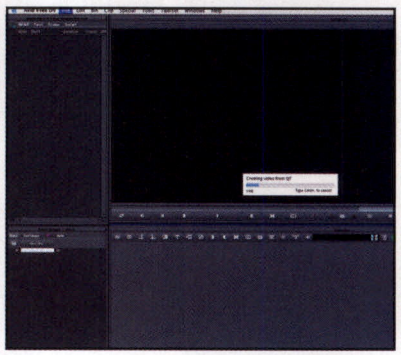


2 The countdown helps anybody who screens your movie to time the moments when it appears on screen. Film festivals and TV stations need this countdown. Colour bars also help them calibrate projectors or other equipment to display your video correctly, and with the correct volume.

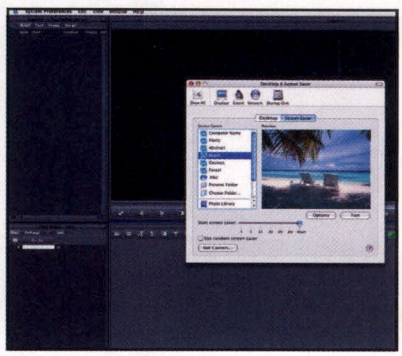
3 Import the movie ColourBars.mov, and duplicate it multiple times, until you have at least 30 seconds of colour bars and tone before the countdown. Most TV stations or VHS duplication houses prefer at least a minute of colour bars.



4 You can now output a QuickTime file, called Master Tape, which can be used in *Avid Free DV* to create a mini DV master tape. For archiving, you should think of this file as your master tape, because tape is not a good long-term storage solution.



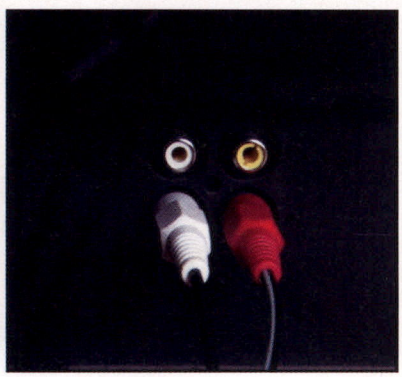
5 Connect your camera to your computer via FireWire, and switch it on. Launch *Avid Free DV*, and import the Master Tape file, and drag it to the timeline. It may take a long time for the file to import, so...



6 ...turn off screensavers, energy savers, or other tools that may interfere with the output process. When printing to tape, you should close all other applications, so that there's nothing to get in the way of your editing software.

7 Go to Clip>Digital Cut to open the Digital Cut tool. Click on V1, A1 and A2, so that all the audio and video will be exported back to your camera. Because you're using DV, the copy on tape will be an exact digital match of your file.

8 Press Record on your camera, and when it's been running for a couple of seconds, press the record button on the Digital Cut tool. Your movie will start playing back through the camera viewfinder, as it's recorded to tape.



9 Your mini DV copy can be used at a VHS duplication house, for screening, or to make your own VHS copies. Connect your cameras to your VCR with composite cables or an S-Video connector, and play the master tape while recording to VHS.

Part 4: Output to the Web

Use *QuickTime Pro* to get your movie ready for the Web...

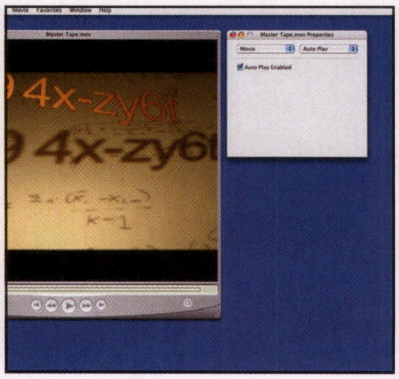
Beta SP

If you're lucky enough to have your film accepted for broadcast on TV, or at a film festival, they will almost certainly ask for a copy on Beta SP. Rather than hiring an SP deck, take your mini DV tape to a video duplication service, where it can be converted to Beta SP for you.

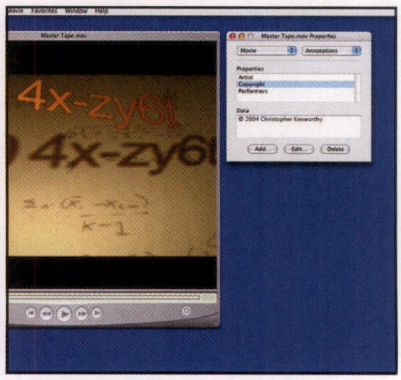
VHS copies

If you're making more than ten VHS copies, consider hiring the services of a duplication house. They can create VHS tapes to the exact length of your film, on high-quality tape. If you sit by your VCR at home, it can take many hours to record all your copies, on expensive three-hour tapes, with a substandard VHS recorder.

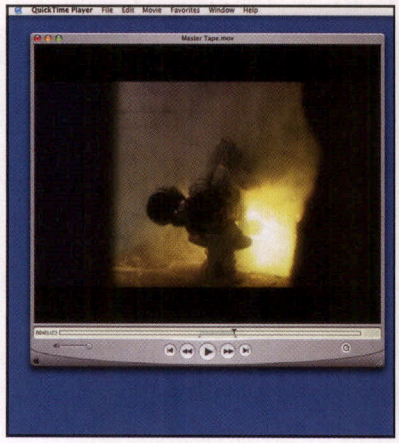
1 Import your completed movie to *QuickTime Pro*. This should be the version without countdown and colour bars.



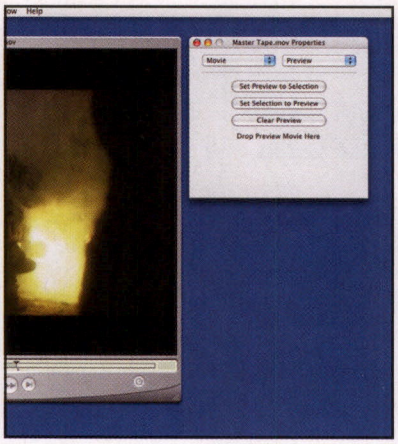
2 Go to Movie>Movie Properties, and choose Auto Play from the dropdown menu. Check the Auto Play box, so that the movie starts playing as soon as it's opened. Make sure your movie is at frame 00, so that it autoplays from the beginning.



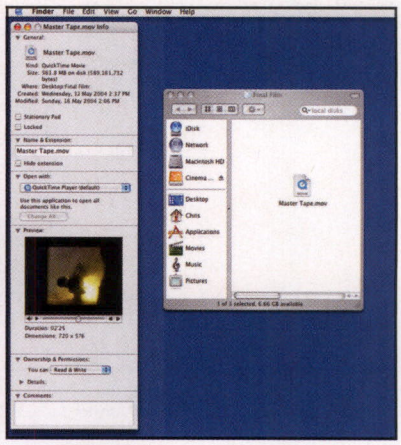
3 While still in Movie Properties, choose Annotate from the dropdown menu, and click Add. Choose the information that you want to be stored with your file, such as copyright information.



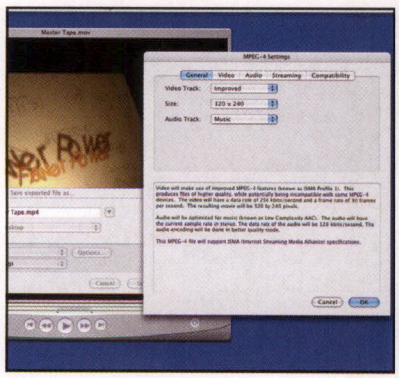
4 Go back to the main window of your movie, and select an area of the film that you want to be used in the movie's preview. Do this by Shift-dragging in the timeline.



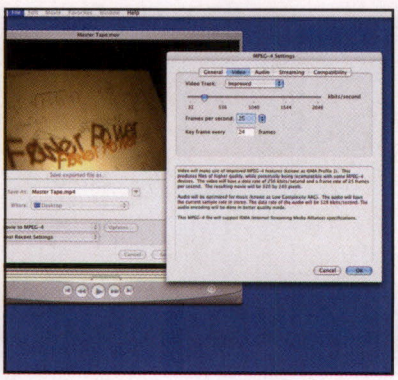
5 Go back to Movie>Movie Properties, and go to Preview. Click on Set Preview to Selection.



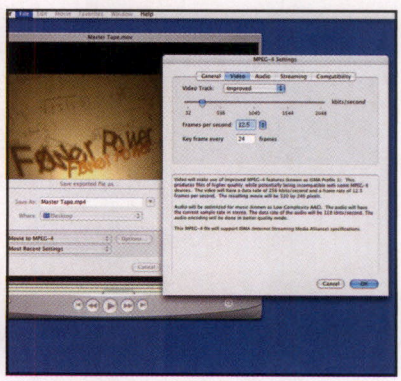
6 When anybody gets information on this movie file, the selection you've just made will show as the preview of the movie. It's more use to select a good scene for the preview, rather than the title sequence.



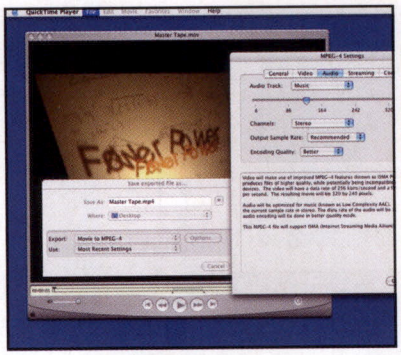
7 Choose File>Export, and set Movie to MPEG-4. Click on Options to reveal more details. Under the General settings, choose Video Track: Improved, or Basic, if you want to make the file as small as possible.



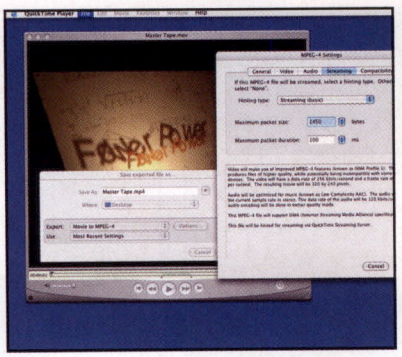
8 Click on Video, and change the framerate to 25, as this is the framerate of your sequence – anything higher makes a larger file without improving quality. At the bottom of the setting box, the details of your file update as you make changes.



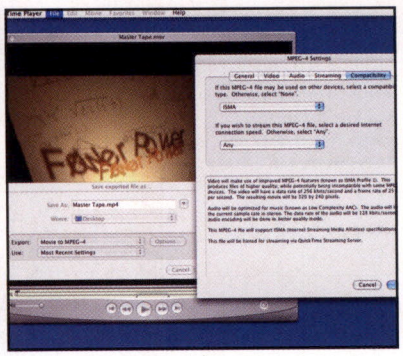
9 If you want an even lower framerate, to make the file as small as possible, reduce the rate by half, a third or a quarter, rather than just typing in a lower number. So you could use a framerate of 12.5, 8.33 or 6.25.



10 In the Audio section of the Settings, you again have to make a choice between quality and file size. While the box below says that the file will support ISMA, it's small enough for streaming. If you can, make the file Stereo, with Better Encoding.



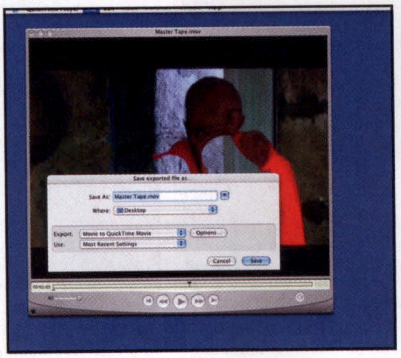
11 Under Streaming you can choose the Hinting type. If your movie is going to be downloaded, rather than streamed, you can deselect Hinting. If you want to steam the movie, set Streaming (Basic).



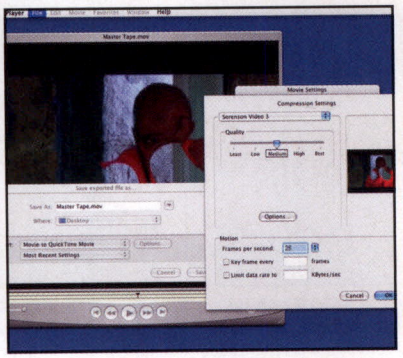
12 Under the Compatibility settings it's wise to check the ISMA settings, which mean the file meets the requirements and standards of the Internet Streaming Media Alliance. You can also choose whether the movie will play over standard modems, broadband or cable connections. Click Save, and you're done.

Part 5: Fast-start Web files

Create a 'fast start' file, which begins to play while downloading...



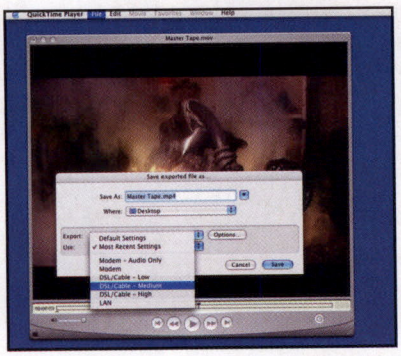
1 Export your file as 'Movie to QuickTime Movie', and click on Options.



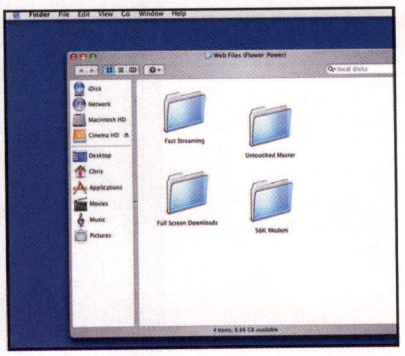
2 Click the Video Setting button, and Choose the Sorenson Video 3 codec, set to Medium Quality, and 25 frames per second.

3 Click OK, then in the Movie Settings check the box that reads 'Prepare for Internet Streaming'. Use the dropdown menu to choose Fast Start, and click OK.

4 When steaming, you should use Video compressors: MPEG-4, Sorenson Video (any version), or H.261, H.263nad Audio compressors: AAC, QDesign Music, QUALCOMM PureVoice. Other compression formats may work, but these are the most reliable when using QuickTime.



5 Always consult your Web-hosting company to make sure you're meeting the exact requirements for their server, before final export.



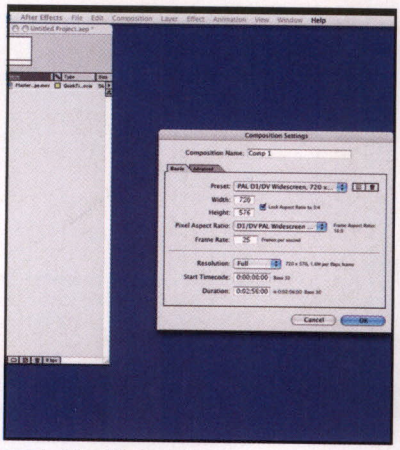
6 When you've finished, you can upload to the Web, but you should always store your completed outputs in clearly marked folders.

Part 6: Export for DVD

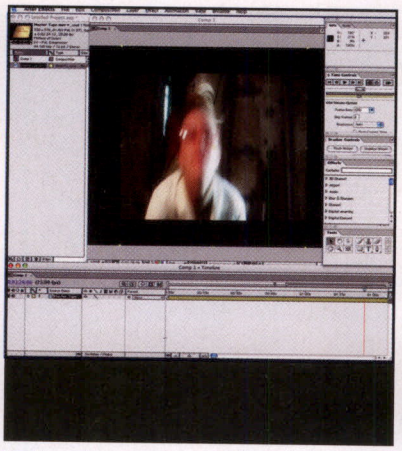
To make your movie work as a widescreen movie on a DVD, you need to perform a special output...

Last-minute changes

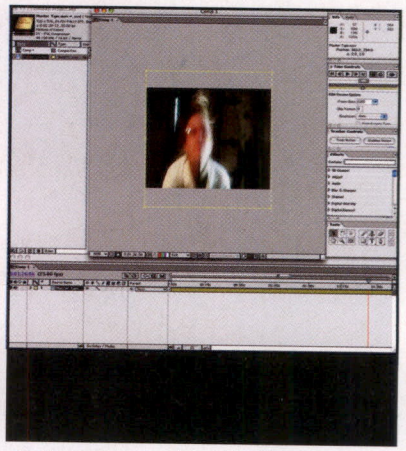
When you've made your final output, always run it through a television to see how the end result looks. It's even worth making a VHS copy and a test DVD, to check the final results. Sometimes, a shot may look darker than you expected, so you can go back and make changes before it's too late.



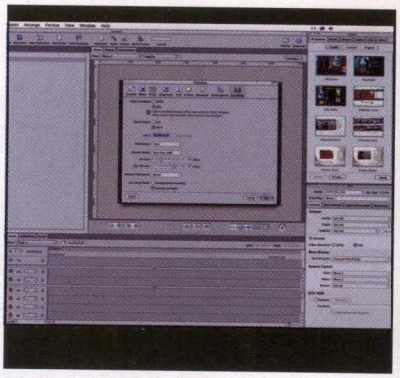
1 In *After Effects* create a New Composition, but set the Pixel Aspect Ration to D1/DV PAL Widescreen (Frame aspect ratio 16:9).



2 Import your master movie file and drag it to the timeline. Although this is a widescreen setting, the screen still appears to be square. Your movie will also appear to be compressed horizontally.



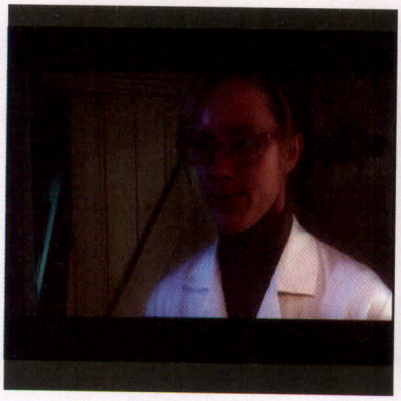
3 Expand your movie until the black bars are no longer visible, and your frame exactly matches the *After Effects* frame. Export the completed sequence.



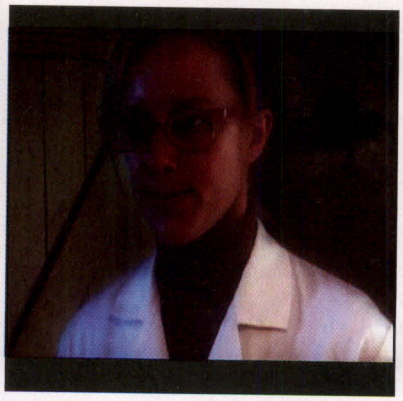
4 To convert the movie to MPEG-2 format for DVD, you'll need high-end software such as *DVD Studio Pro*. Go to Preferences>DVD Encoder, and click PAL 16:9.

5 Drag your completed 16:9 movie file to the menu of your DVD, and choose Create Button and Connect To Track. A button for your movie will appear, and you'll see your master file appear as a track in the Track folder on the left.

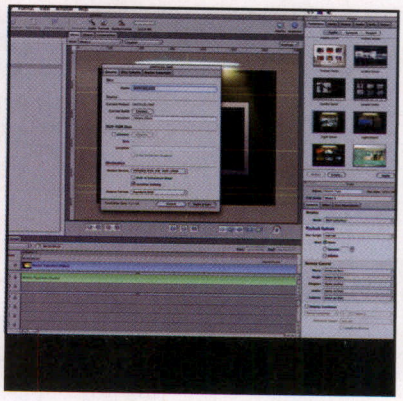
6 Select your track in the Track Folder, then on the bottom-right of the screen, set Mode to 16:9 letterbox. Although you still need to design the DVD, your track has been imported successfully.



7 Encoded in this way, your 16:9 movie will appear with black bars at the top and bottom on a square television. This is identical to the file you output to tape.



8 The major difference is that when you show the same DVD on a widescreen TV, the image will fit exactly, without any black bars, or without compressing the frame.



9 When your DVD is complete, burn a test version, and run it on both kinds of television set to make sure the encoding has worked in the way you'd planned. ca-p

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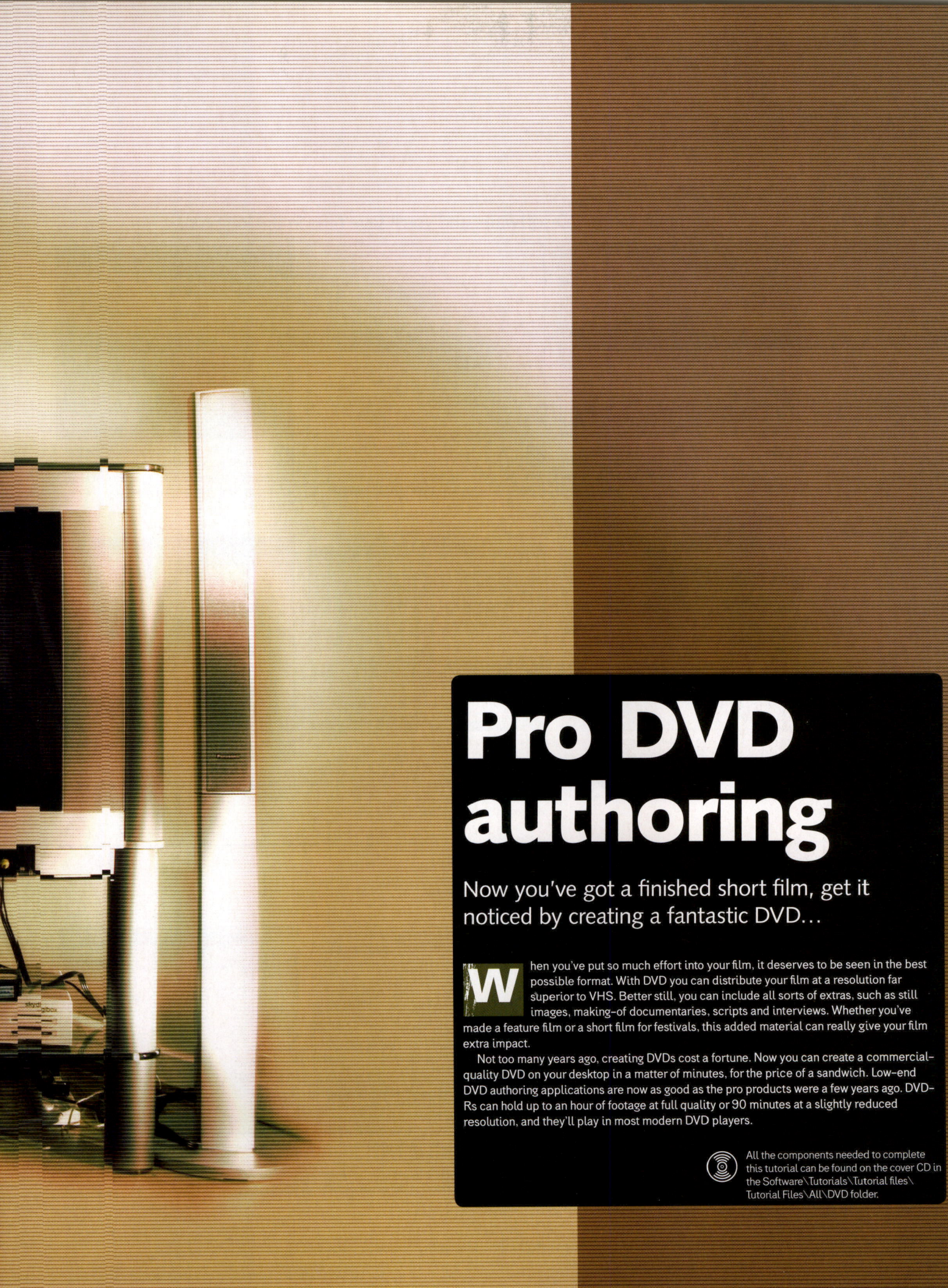


Pro DVD authoring

Now you've got a finished short film, get it noticed by creating a fantastic DVD...

When you've put so much effort into your film, it deserves to be seen in the best possible format. With DVD you can distribute your film at a resolution far superior to VHS. Better still, you can include all sorts of extras, such as still images, making-of documentaries, scripts and interviews. Whether you've made a feature film or a short film for festivals, this added material can really give your film extra impact.

Not too many years ago, creating DVDs cost a fortune. Now you can create a commercial-quality DVD on your desktop in a matter of minutes, for the price of a sandwich. Low-end DVD authoring applications are now as good as the pro products were a few years ago. DVD-Rs can hold up to an hour of footage at full quality or 90 minutes at a slightly reduced resolution, and they'll play in most modern DVD players.

All the components needed to complete this tutorial can be found on the cover CD in the Software\Tutorials\Tutorial files\Tutorial Files\All\DVD folder.

Part 1: Organising files

Get organised before you even open your DVD software, and you'll save time in the long run...

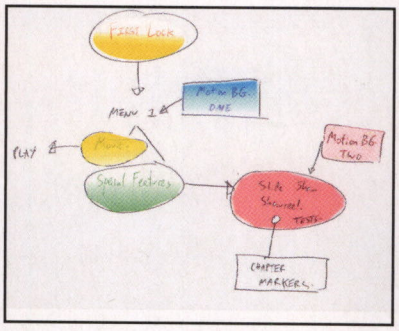
Too much motion

When creating a DVD, be careful not to go overboard with motion. If you drop a full-frame film clip into the background, and add motion buttons, it becomes impossible to see what's happening. Always aim for clarity. There are many commercial DVDs which lack clarity, and which are difficult to navigate. Learn from their mistakes and create an infallible DVD.

DVD-RWs

You can record your project to DVD-RWs with some software, but the results can be unpredictable, and won't play on all players. As DVD-Rs are continually dropping in price, it makes more sense to use them all the time.

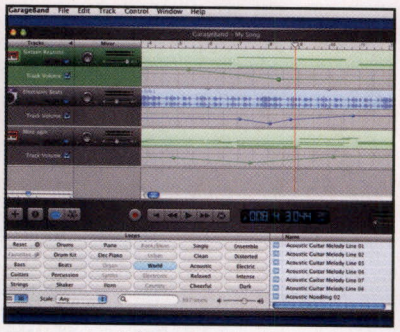
1 Check that you have all the finished footage, and make sure you have copies with the final mix of sound and music, finished effects and credits. Never rush into creating a DVD, but make sure everything is as good as you want it to be.



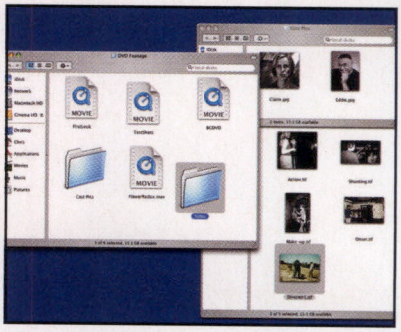
2 Before getting into the authoring, draw a plan of your DVD on paper. Later, you'll use the DVD Map tool to see how all your files relate. By making this plan, you're more likely to organise things in a logical way.

3 Having drawn up a plan, you may realise that you need to create extra files, such as motion backgrounds, images for buttons, and a First Look, which is the footage that plays when your DVD is first loaded.

4 If you plan to add Special Features – such as mini-documentaries, examples of test shots, or a gag reel – finish all your editing work before starting on the DVD. This way, you can keep accurate track of how much space remains available on the disc.



5 You can add background music to every menu of your DVD. Sometimes this music can be distracting, especially if you repeat the main movie theme a lot. If you need more music, design some in your music-creation software. If you prefer to use pre-recorded music, you can import that later.



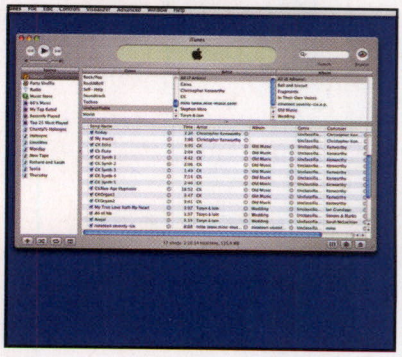
6 Assemble all your files into one clearly labelled folder, so you can access it easily when creating your DVD. This is far more efficient than having to search your hard drive each time you need a file, and means you're less likely to miss something out.

Part 2: File formats

Import movies, images and music to your DVD...

1 Check the software manual that came with your DVD software to see which files are compatible. Usually, you'll be able to import QuickTime movies. More high-end software enables you to import a huge range of movie files.

2 Still images can usually be imported as JPEGs, TIFFS and PSD files. Avoid using highly compressed images, but don't make them so large that they create huge files. A resolution of 72 dots per inch is sufficient.



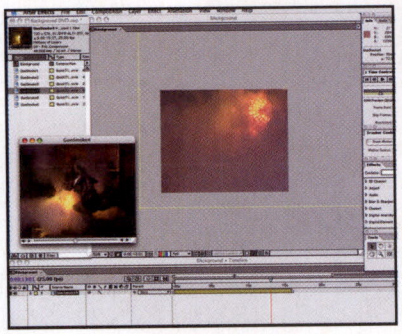
3 Music can usually be imported as an AIFF file (directly from a CD), and some software enables you to use MP3s. You can use *QuickTime Pro* to convert file formats, if need be.

Part 3: Motion background

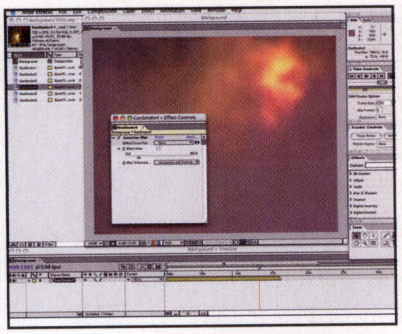
Create a swirling, hazy background for your DVD menus...

Master DVD

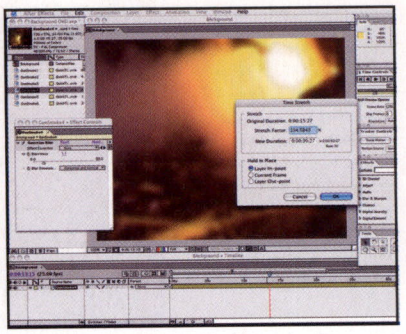
If you're planning to make more than one film, it's worth creating a Master DVD, with all your films in one menu. When you make a new film, you can simply drop it into the master DVD and your entire collection will be ready for output.



1 In *After Effects*, drag a piece of footage to the timeline. Backgrounds are often best if they capture the feel of the film, without having too much detail. Press S and drag the scale, and then reposition the clip.



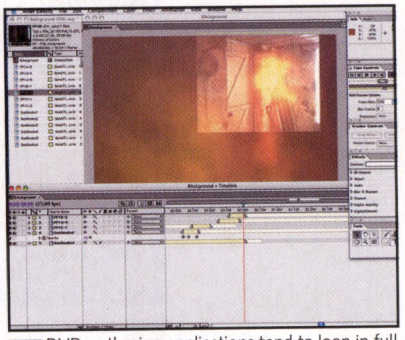
2 Go to Effects>Blurs>Gaussian Blur, and set Blurriness to about 7.0. When footage is expanded it looks pixelated, and this can be made even worse by the DVD encoding process, so it's better to use a blurry image.



3 Select the clip in the timeline and go to Layer>Time Stretch. This is a more basic way of affecting time than Enable Time remapping, but is ideal for slowing a clip. Set the Stretch Factor to about 200 per cent, click OK, and the clip will play smoothly.

4 Go to the end of the clip and add a few contrasty clips to the timeline. Shorten the clips to a few frames and shrink them so they appear like windows on the screen. You can keyframe the opacity to increase and decrease at either end. Set the blending mode to Add.

5 Add more clips, overlapping each other and flashing in rapid succession. DVD motion menus loop continually, so you need to hide the moment when the loop resets – these flashes do the job perfectly.



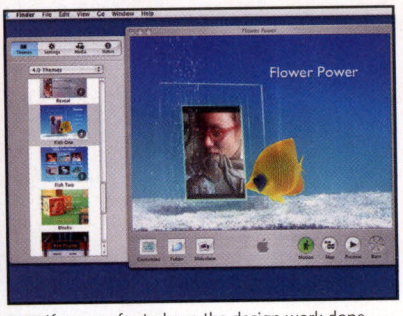
6 DVD-authoring applications tend to loop in full second increments, so if you import a file that's 12.5 seconds long, only 12 seconds will be played. Select all your layers, and drag them so that the last frame hits a full second marker.

Part 4: Importing motion menus

To start building your DVD, bring in the background for your motion menu...

1 Open *iDVD*, or the authoring software you're using. A preset theme appears and you can override this quickly. Drag the BGDVD.mov file from your DVD Footage folder, press Command, and drop it on the background. Be careful not to drop it in a 'drop zone' that reads 'drop here' in *iDVD*.

2 To see your moving background, click the green Motion button. You can turn motion off if it slows you computer down, but always turn it back on before burning. Type the DVD title name into the text box, click Customise, and drag a music file to the Audio box.



3 If you prefer to have the design work done for you, feel free to use the themes that are provided with the software. These all work well and make DVD creation quicker than ever, so long as you don't mind using a standard look.

Part 5: Importing footage

Drag and drop your movie files into place to build up your DVD...

Subtitles

With software such as *DVD Studio Pro* you can add subtitles easily, by typing them in at the correct points. Subtitles enable you to reach a wider audience, and they can also help settle arguments; many viewers argue over what a particular character said, and the subtitles help you see what the line was without buying the script.

1 Drag movie files from your folder directly onto the main screen. This creates buttons for the movies and encodes your footage for the DVD automatically in most apps.

2 Press the Folder button to create a new folder entitled Special Features. Double-click this to open the folder and you'll be taken to a new menu. Drag all your special feature movie files, such as TestShots.mov, into position.

3 When you create a folder, the Back button is put in place automatically. You can move the button manually later, but for now, double-click the Back button to return to the main menu.

4 Click the Status icon to check how much of the DVD you've filled, and to see the progress of encoding. If your DVD is getting full, you can choose whether to reduce menus, stills or movies to make sure everything fits on.

5 Click the map icon to reveal a plan of your developing DVD. Compare this to your earlier plan and ensure that everything is going in the correct place.

6 Each time you create a new folder, you need to add a background. You can drag the same BGDVD movie file to the background, or use a still image to add variety.

Part 6: Button styles

Your buttons should show up clearly, be easy to locate and simple to understand...

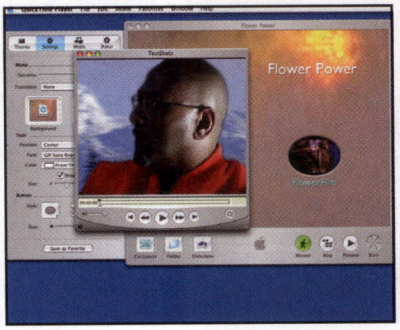
1 Click on Settings, and under Styles click on the Button pop-up. Choose a button that is appropriate for your film. If you want to keep buttons free of images, choose T for Text-Only.

2 If you use a button with an image, click on the button in the main window and a slider appears, showing the start frame. Drag the slider to the point where you want the button's movie to begin. Click the Motion button to see this in action.

3 You can alter the duration of the button's movie by dragging the Duration slider on the left. If you prefer the button to have a still image, deselect the Motion box and drag the slider to a chosen still image.

Part 7: Working with folders

Although your DVD should be clear and easy to understand, it should also look good...



1 To give your folders an image, rather than the folder icon, open one of the QuickTime movies from your DVD folder. Watch this movie until you find an image that you want to use, and choose Edit>Copy.

2 Select the folder icon, and choose Edit>Paste, to make the folder image appear. One way to differentiate folders from buttons is to use still images on folders, and motion buttons for movies.

3 Click on the folder name and type in a more meaningful name. If your main movie is on the same page, you can simply use PLAY, so there is no doubt about the function of that particular button.

Part 8: Tidying up

More advanced settings give you control over colour, fonts and placement of buttons...

Disc labels

When your DVD is complete, take the time to design a good label and purchase a labelling kit for your printer. It's tragic to go to all this effort, and then scrawl the title of your film onto the disc with a marker pen.

Commentaries

High-end software enables you to add directors' or actors' commentaries to your films. If you shot something substantial, it's good to sit everybody around and record while you talk over the film – make sure everybody wears headphones, or the soundtrack will interfere.

1 In the Advanced Menu, turn on Show TV Safe Area. A translucent grey frame appears around the edge of the frame, showing the space that is guaranteed to show on TV screens. If you place a button or folder in the grey area, it may not show up on a standard TV.

2 In Settings, change the Text Position to Custom, so that you can drag the menu title anywhere on the page. Select a font, ideally the same one used in your movie's titles.

3 Change the fonts of all buttons, on every menu. Although it's tempting to use lots of different fonts, you'll create a more cohesive look by using one font throughout.

4 Choose colours for buttons and text. The colour does not have to be the same on each page, but should make the text as legible as possible. Be aware that bright colours can look garish on TV screens.

5 With everything else adjusted, you can now finalise the position of buttons and titles. Make sure that Custom position is set for everything, and then drag the various buttons and text into their final positions.

6 If you want to add background music directly to a menu, click on Media – you'll be taken to your music folder. Any clip you apply will be looped exactly as though it had been dragged in from the desktop.

Part 9: Slideshows

Present your images in a full-screen slideshow, with background music...

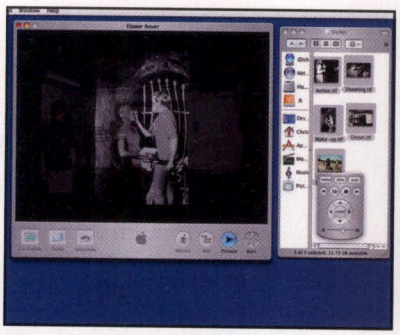
Disc boxes

Blank DVD boxes are surprisingly low-cost, and it's easy to design a cover, slide it into place, and make the perfect storage solution for your precious film. If you're entering festivals or distributing professionally, a DVD box is far better than the transparent case in which the disc is supplied.

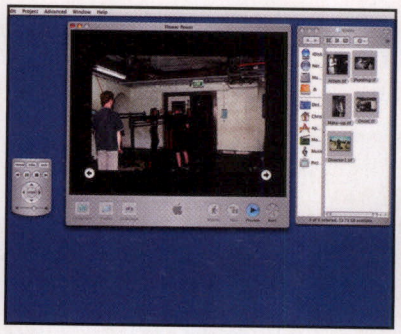
1 Click the Slideshow button, and adjust position, font and colour of the new folder, as you've done before. Paste an appropriate image into the folder, so that the Slideshow button is in keeping with the style of your DVD.

2 Double-click your Slideshow folder, and you'll be taken to the Slideshow window. Select your photographs from your DVD folder and drag them into place. Alternatively, you can choose Photos from the Media window, and drag images directly from your Photo Library in *iDVD*.

3 Drag and drop the images into order. If your slideshows depicts the making of the movie, you can arrange them chronologically. If there's a mixture of black-and-white and colour images, mix them up to avoid monotony.



4 Set Slide Duration to about three seconds, so that each image is on screen long enough to be seen, but not so long as to get boring. If you want a fluid transition between images, rather than flashing from one picture to the next, select a Transition. Click Preview to see the results.

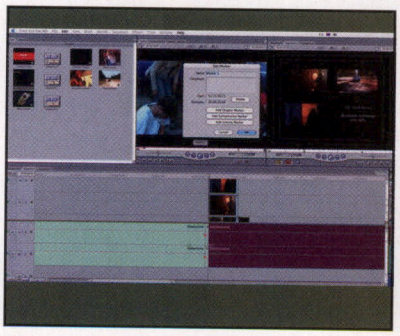


5 You can also check the Display Arrows setting, so that arrows appear on the slideshow. These arrows act as buttons, so that the audience can flick through the slideshow. Check the Loop feature if you want the slideshow to loop over and again.

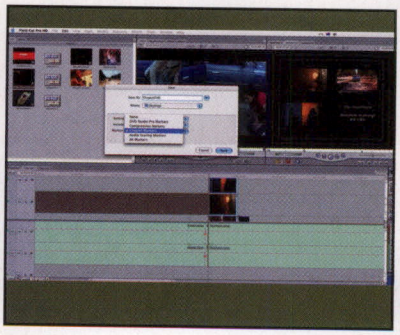
6 Even if you don't use audio elsewhere on your DVD, slideshows are usually improved by some music. You can also check 'Add original photos on DVD-Rom', so your audience can import the photos onto their own computers.

Part 10: Different chapters

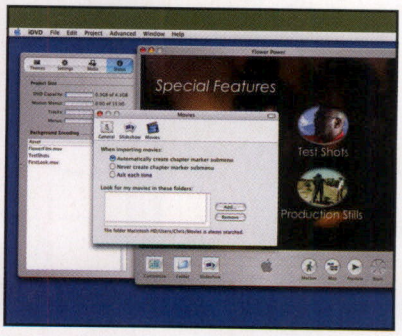
Break your movie down into chapters, so users can skip to the segment they want to view...



1 Use advanced editing software such as *Final Cut Pro* to add chapter markers to your footage. Go to a point in the timeline where a new section of the movie begins and press M twice, then choose Add Chapter Marker.



2 Choose Edit>Export, and in the Marker sub-menu select Chapter Markers. These marks can be interpreted by a wide variety of DVD authoring software.



3 In *iDVD*, go to your Preferences and make sure that you've checked 'Automatically create chapter marker sub-menu' in the Movies tab. This saves you doing the work manually.

Disc won't play

From time to time, no matter how much effort you've put in, people will tell you that your disc won't play in their DVD player. This is, almost without exception, due to them owning an older DVD player, so don't assume that you've made a mistake. Modern players should happily play DVD-Rs without any problems.

4 Import your movie (in this case MakingOf.mov) to the menu. It appears as a folder, because the movie is being created along with a list of chapter headings inside the folder.

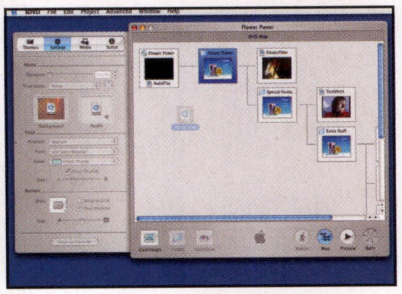
5 Once you're inside this folder, rename the menu title and change the names of the movies. You can also set a new look for these buttons. The first button should play the movie, and the next buttons should be for scene selection.

6 Double-click the scene selection folder, and rename, arrange and alter the menu until it matches the rest of the DVD. To the user it will take just a couple of button presses to get to these chapter markers. Make sure the images in the buttons accurately represent the chapters.

Part 11: First play

Set the scene for your DVD with a brief First Play clip…

1 A 'First Play' is a clip, usually showing your name or your company name before you get to the main menu. Keep your First Play short. Anything longer than five seconds annoys users who want to get on with the film.



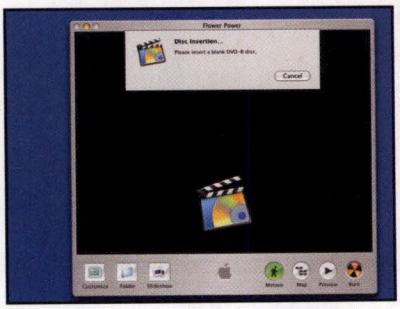
2 Go to the map view and you'll see that the very first item is a space for the three Auto Play files. Drag your short First Play movie to this space.

3 Click Preview, and test the disc thoroughly, making sure that every button and folder acts as expected, and that everything you want to be in place is in place.

Part 12: Burning the DVD

When everything's been checked, it just takes a couple of clicks to set your DVD production line burning…

1 If you want motion menus to work, don't forget to click the Motion button. When you can see your motion buttons and menus working, you can progress to the next step.



2 Click the Burn button twice and insert a blank DVD-R. Buy a small quantity of DVDs and test them on your system, before buying in bulk.

3 Your DVD will burn in the background. When you've finished, keep the project files and the DVD source files safe on your hard drive. This enables you to add extra items later, without having to rebuild the DVD from scratch. ca-p

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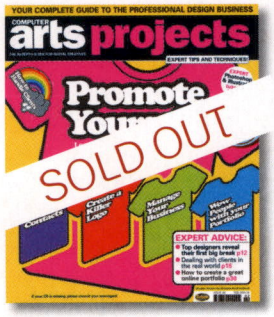

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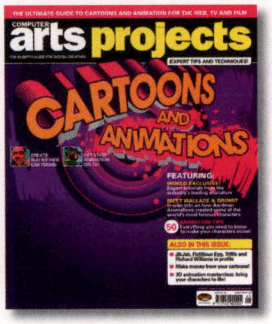

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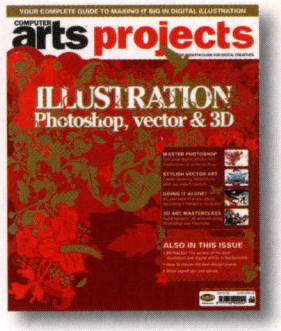

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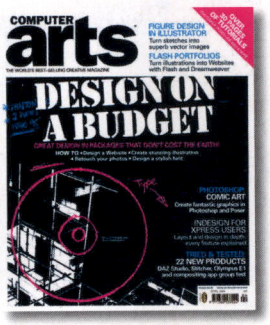

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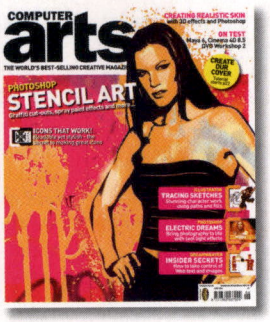

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Elemental Films

"Only mad people deliberately set out to become filmmakers." May Miles Thomas, Director of the UK's first fully digital feature film, tells us what it takes to succeed in the film business...

May Miles Thomas has been described by *Screen International* as 'visionary', not bad considering Elemental Films only came into being in 1995. May's self-financed debut, *One Life Stand*, was a triumph for its creative strengths but also beat Pixar's *Toy Story 2* to become the first fully digital movie on UK screens.

An evangelical proponent of digital production techniques, May and partner/producer Owen Thomas have recently completed *Solid Air*, Elemental's second full-length venture. The film is again digitally produced, but this time using High Def — when it opens at this year's Cannes Film Festival, *Solid Air* could announce May's arrival on the directorial A list.

A graduate of the Glasgow School of Art, by the mid 80s May was working as a designer for the BBC in London. Here she began to experiment with film: "Playing with old Super 8 cameras and the first clunky video formats, I found moving pictures thrilling." This led May into directing, a path she followed with gusto, culminating in a prolonged stint turning out well-financed promo videos for London's big music labels.

The budgetary freedom which the labels then had gave May the chance to really get to grips with film and the nitty-gritty of post-production. But the budgets didn't last and it became clear in the mid-90s that some drastic action was needed if a career in movies was ever going to materialise.

Making a stand

Skip forward a few years to the BAFTA New Talent Awards 2000, where Elemental Films' first feature, *One Life Stand*, romped away with the awards for best film, best director, best performance and best writer. Acclaim in the press and at festivals around the world followed, establishing May as a creative force not to be trifled with. But getting to this point has been far from straightforward.

"Like so many wannabe filmmakers," explains May, "I felt frustrated because for years I had tried and failed to get a movie made in the conventional way — with a lot of money, a large crew and the backing of the industry machine." By the time she sat down to pen the script for *One Life Stand* in 1999, May already had plenty of writing experience; in fact, since 1992 she's turned out no less than 23 screenplays. She fully admits that, "One of the motivating factors in making the film was that up to that point I had written a pile of scripts, but they were just catching dust."

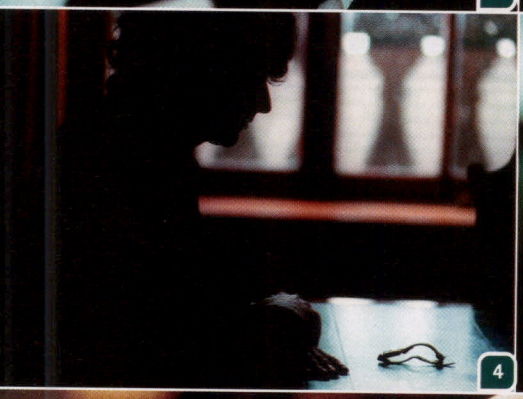
Fortunately, technology came to the rescue, "The big plus in making *One Life Stand*," says May, "was knowing the tools had finally become accessible and affordable. Basically, for the cost of a second-hand car you could own a camcorder and edit system." *One Life Stand* cost £34,850 to make from end to end, the majority of the costs coming from actors and crew.

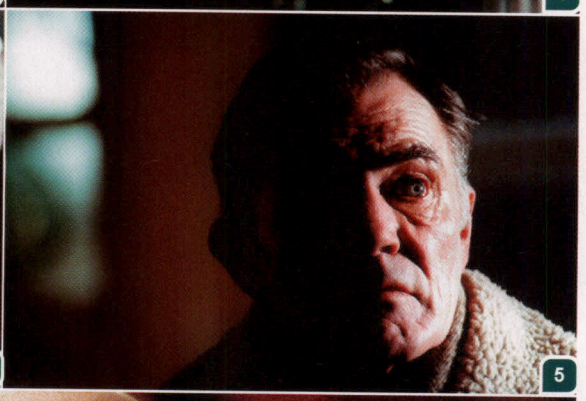
Technical manoeuvres

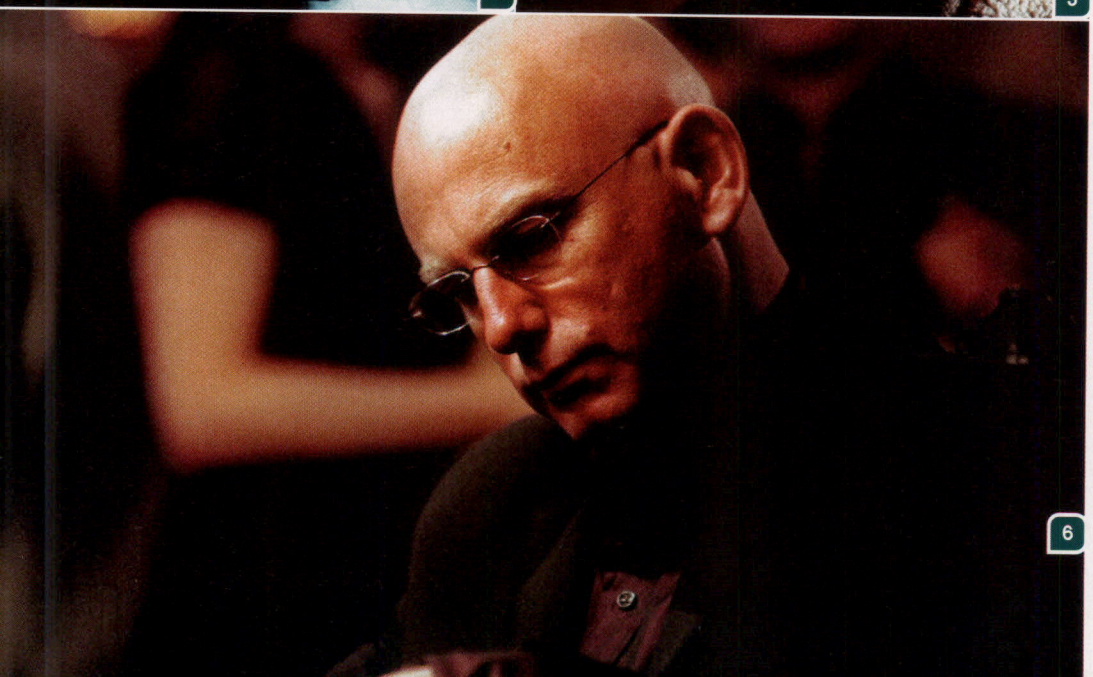
The film was cut using *FAST DV Master* and in-sync's *Speed Razor*. May recalls that the whole process was pretty makeshift: "We input the material with a Sony video Walkman DV-D900E, which is about as basic as it gets, and I downloaded *FilmFX* for about $200 to grade the pictures."

Grading was a crucial part of the process, and remains so on the latest production: "I'm big on look. >

OPPOSITE TOP: Thanks to her experience with film, May was able to select just the right stock to give the film transfer of *Solid Air* the feel she was looking for. "You have to know what you're asking for," she says. "Some film holds the black much better and that's what I wanted."
OPPOSITE BOTTOM: Hugh Ross, played by Mathew Bill Boyd, in a scene from *Solid Air*.







"Some of the freshest and most entertaining movies I've seen recently have been shot using low-cost camcorders"

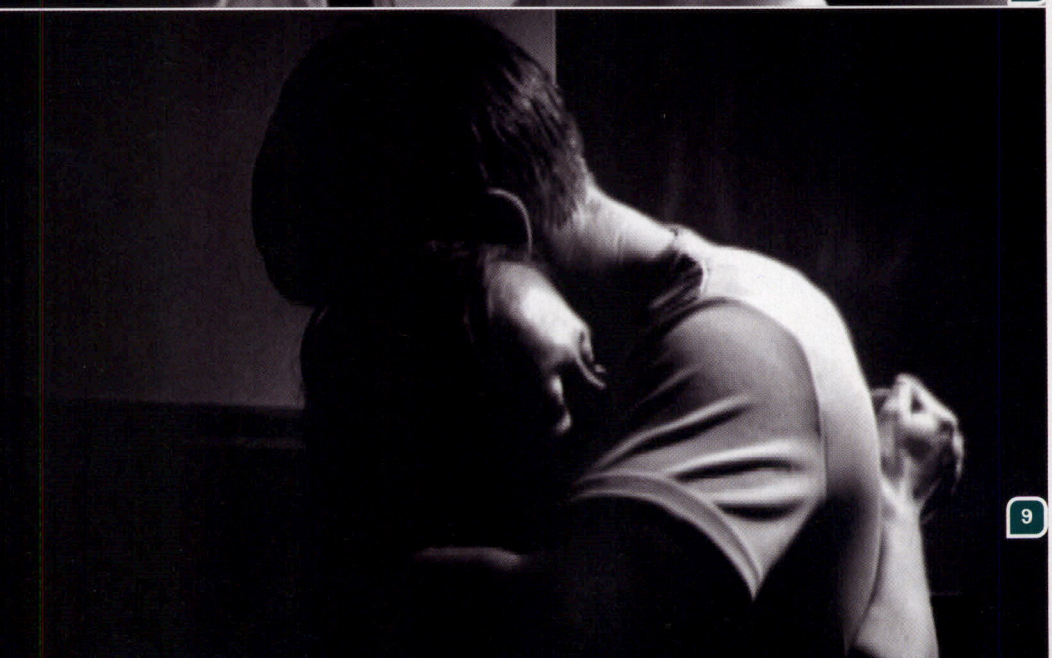
It's a hangover from when I made music videos. I have massive respect for colourists, because they can make or break your shots and completely alter the tone of your movie."

Even *Solid Air*, with its six-figure budget, got the DIY treatment: "I still did the edit in my front bedroom, this time using a Matrox Digisuite LE with *Speed Razor 2000* on top as the cutting tool. I transferred the HD rushes to a Sony DSR1600 AP DV cam recorder for digitising and offline purposes. It worked brilliantly and conformed with the HD online at [post-production house] HOME in London."

The arrival of affordable digital technology has revolutionised the filmmaking industry, putting feature production within reach of anyone with the funds to get hold of a good DV cam and NLE set-up. Despite this, the expected rash of independent films has failed to materialise. "After making *One Life Stand*," says May, "I imagined the streets would soon be over-run with wannabe filmmakers wielding camcorders. It's sort-of happening, but quietly and only by a few dedicated and determined individuals, supported through networks such as the brilliant Shooting People."

That isn't to say that the revolution never happened, it's just taking time to show concrete results: "Some of the freshest and most entertaining movies I've seen recently have been shot by people using low-cost camcorders, people who otherwise wouldn't have had a chance. That's inspiring". May holds fast to the digital ethic: "I absolutely love and adore DV and won't

1. David Fehilly as Doughboy in *Solid Air*. The film centres around a son's turbulent life brought on by gambling debts and his troubled relationship will his ailing father.
2. The second feature to come from the Elemental stable was considerably more ambitious than the first. "*Solid Air* is a stupidly ambitious project – 50 speaking parts, 350 extras, 45 locations, big score, Cinemascope ratio, full-on Dolby Digital soundtrack," says May.
3. The promotional images for *Solid Air* show the depth of feeling which can be achieved with a fully digital production. May used Sony's HDW F900 CineAlta system with stunning results, "I'm a great believer in 'look'," she says.
4. *Solid Air* tells the story of a son's betrayal of his father, of gambling and of the law. Shot on HD and transferred to 35mm, the film shows that six-figure budget digital production techniques can now rival film in terms of quality, while outstripping it in flexibility.
5. May puts great faith in the power of a film's colour treatment. "Personally, I'm a dabbler, sticking to the original *FilmFX II* software I purchased in 98 which, used judiciously, eliminates the hard-edged immediacy of video."



"Work out who and what you need to realise the movie — everything from DV tapes to pizza. And don't make any promises you can't keep"

hear a word said against it! When I made *One Life Stand* with a Sony VX1000E on mini DV, I was quoted as saying I would have shot on sellotape just to get the story told. I still believe that."

Hardest game in the world

But what if you want to make your own movie, where do you start? "If you really want to make that movie, start with a story you really believe in, because by making the film, you'll have to live with it for a long time." Write a script that can be realised on the resources you have available, because there's nothing worse than a half-finished project. "Work out who and what you need to realise the movie — everything from DV tapes to pizza. And don't make any promises you can't keep."

If you're working on a budget then you'll be covering at least a handful of jobs yourself, which means you need to keep a cool head. "I rely on the script as the linking device," explains May. "I believe a film gets made three times anyway — in the writing, during the shoot and in post-production — but for me, the script is the script is the script."

If you're still game, grab that DV cam and start shouting orders. May leaves us with these final words: "Movie-making is all about decisions — if you don't make them, someone else will. So trust your instincts and, most importantly, allow yourself the freedom to screw up. After all, what's the worst that can happen? It's only a movie!" ca-p

6. John Doran, played by Gary Lewis, is the enigmatic businessman who calls in a gambling debt, precipitating the rest of the action in *Solid Air*.

7. May's first feature-length project, *One Life Stand*, won all kinds of awards, including best film, best director and best writer at the BAFTA 2000 New Talent Awards. Its critical success helped May to become an established force and ensured the budget for her next project reached six figures.

8. *One Life Stand* tells the story of a single mother struggling to give her 18-year-old son a future. Her dreams of seeing him become a supermodel are crushed when she finds out he's actually a male escort.

9. Although May shot and edited *One Life Stand* entirely on DV, the results were astoundingly filmic: "I asked a lot of the format – it's one thing to show your movies on a domestic TV monitor, it's something else to screen in front of a sell-out crowd at a film festival with the image projected 30-feet wide."

Find out more about Elemental Films at **[w]** www.elementalfilms.co.uk/. Or contact **[e]** info@elementalfilms.co.uk, **[t]** +44 (0)141 332 0375.

Photograph: Anupama Minz

A UK Film Council project in tandem with FilmFour Lab, Cinema Extreme funds shorts with an element of the extreme. Amit Kumar's *The Bypass* (top), which had no dialog and was set in the desert, was one of the first five projects to be supported. Also lucky enough to benefit from funding was Duane Hopkins' *Love Me or Leave Me Alone* (above).

PROMOTE YOUR SHORT FILM

"You have to be prepared for the long haul, you have to deal with rejection well. And remember, it only takes one yes," filmmaker Matthew Parkhill lets us down gently...

Life isn't easy for the aspirant filmmaker. Even after all the blood and tears of production there's no guarantee your work will find its audience — a buyer with deep pockets is even more unlikely. That's where promotional skills come in handy; a knack for being in the right place at the right time is no longer optional.

Thanks to the ready availability of digital technology and the perceived accessibility of the medium, the volume of short films produced each year has exploded. At just the same time, the traditional outlets of cinema and TV are turning their backs on what has never been a major money-spinner.

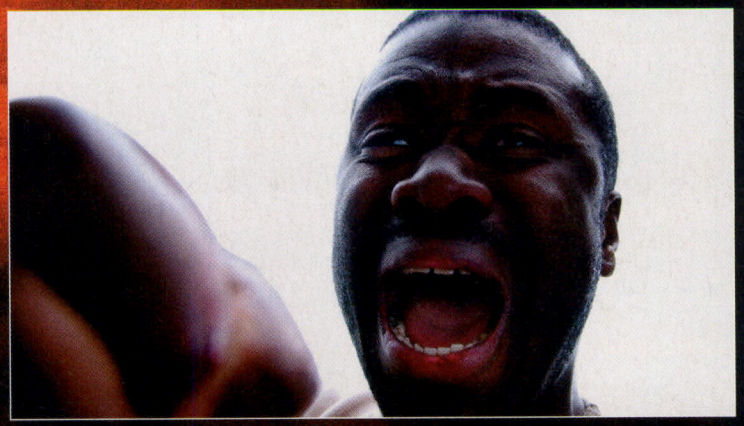
Despite all this, the short film continues to act as a nursery for tomorrow's talent and, in that guise, demand is as keen as ever. Jeremy Howe, BBC head of short film, was right when he said of shorts, "They are an incredible opportunity to discover and develop talent, to give a director their full freedom." He also added a sentiment common in an industry reliant on its talent: "We like to be part of that."

CALLING CARD

For some, like the venerable British filmmaker Shane Meadows, the short is an art form in its own right; for others it's a stepping stone, an industry calling card. Jeremy Howe doesn't have much time for the latter: "It's easy to spot the films which have been made as calling cards: it has to do with flash camera angles. I'm allergic to them."

According to Jeremy, short films should demonstrate what the makers are capable of when given a free rein, where creativity takes precedence over financial rewards: "The fuel of the film industry is money. Even a tiny film is going to cost in the region of a million pounds and people don't invest that kind of money without expecting a return. But that's not why you make shorts."

That isn't to say everyone who wants their short film to act as a bridge to greatness will be making rubbish, as Alice Bennett-Leyh from the Brief Encounters Festival points out: "I think it's necessary to acknowledge that within the confines of the British film industry the short plays a very important role as a calling card and training ground for new filmmakers, as do ads and music videos." The important thing is to be clear about your goals.



Every year the UK Film Council funds and facilitates the production of more than 100 low budget digital shorts from new directors across the UK. Paul Hewlett of the UKFC explains the thinking: "The Film Council is charged with creating a viable film industry in the UK. We're still some years away from that but the digital shorts program is a step in the right direction."

TALENT SPOTTING

To get your work seen, the first port of call has to be the film festival. "I always advise filmmakers that there is one festival whose deadline they should not miss – Clermont-Ferrand in France, which is held late January/early February, just before Berlin," says Geraldine Higgins from the British Council, which assists many short filmmakers to show at, and visit, those festivals every year.

Clermont and events like it will be attended not only by TV buyers and producers looking for talent, but also by other festival organisers and a list of potential collaborators as long as your arm. Alice Bennett-Leyh sums it up: "Our programmers attend other events to scout out talent. More generally, festivals such as Brief Encounters are a great launch pad to get your film seen by the most important people in the industry."

Then there's the Web. Phil Traill, a former winner of the 'newcomer' award at the Soho Shorts festival has just snatched the Orange Pitch Award for his latest script, *Rocking the Boat*, and he's convinced this is the way forward: "All four of my short films are on 3bTV, and I think *Flipped* is still on the BBC Website. It's a brilliant way to get short films out there."

But is anyone ever picked up from exposure on the Web? Elisa Green of leading film site Atom Films can quote examples: "The Studios definitely look at Atom Films for talent. Jeffrey Travis has a deal with Twentieth Century Fox, Tyree Hilliday with Disney and Amy Talkington with Britney Spears' production company." And they all credit their Internet exposure with contributing to, if not causing, their success.

FEEL THE QUALITY

The best marketing ploy is to make a brilliant film – for that there is no substitute. Following the acclaim which met her debut short *Dog*, Andrea Arnold's second – *Wasp* – has won a total of 16 awards at festivals around the world. Her advice is simple, "I've learnt that your films will speak for themselves and be their own promotion. The best thing you can do is get your film seen in as many places and by as many people as possible."

This philosophy seems to be common with those who have produced winning work. *Le Cheval 2:1*, only 90 seconds in length, won Stephen Scott Hayward and Alex Kirkland the DepicT award in 2003 for its brilliantly surreal take on identity crisis. "We quite like the 'make it up as we go along' promotional plan. We'll send our latest, *Pillock*, to the festivals and if nothing happens then we'll keep the title and tell everyone the print was destroyed by fire... then make another one," says Stephen.

IT'S NOT WHAT YOU KNOW...

While this old adage certainly has weight in the film industry, there is the obvious constraint that if the final product is drivel then nobody is going to pay to see it. Matthew Parkhill is another Soho Shorts winner who's gone on to great things, including a string of feature-length productions. "You have to forge relationships, they're important," states Matthew. "A lot of it does come down to who you know. But if you know people and don't have the ideas then what's the point?"

Matthew continues, "You have to originate a lot of work; the more irons you have in the fire the better chance you have of getting somewhere. If you get turned down on a project and it's your only project then you're in trouble. If you have several other things on the go then you still have hope."

Even Andrea Arnold confesses to a moment of weakness over her first film, "I got anxious when it was in Cannes and wore stupid clothes and had fancy business cards made because I thought I had to present myself a certain way, but that's all bollocks." And having seen the error of her ways, Andrea points us to the righteous path: "I think every film you make, no matter how long, should be your best effort to say something true about you and the way you see the world. That should be your only goal."

TOP TEN FILM FESTIVALS

Get your short film shown at as many of these festivals as possible...

CLERMONT-FERRAND SHORT FILM FESTIVAL

www.clermont-filmfest.com (28 Jan - Feb 5 2005)
The daddy of international short film festivals and the first to digitise and make available the entire list of submissions.

EDINBURGH INTERNATIONAL FILM FESTIVAL

www.edfilmfest.org.uk (18-29 Aug 2004)
One of the most highly respected of the UK's independent film festivals, Edinburgh has a long tradition of showcasing the best in short film.

RUSHES SOHO SHORTS FESTIVAL

www.sohoshorts.com (31 July - 6 Aug 2004)
Screened at venues throughout London's media district and dedicated to the short film, Rushes Soho Shorts festival has quickly become a brilliant marketplace for short-film talent.

BRIEF ENCOUNTERS

www.brief-encounters.org.uk (17-24 Nov 2004)
Short film's first home in the UK, the Brief Encounters festival, along with Animated Encounters, is leading the charge for independent production in the UK and overseas.

THE TIMES LONDON FILM FESTIVAL

www.lff.org.uk (20 Oct - 4 Nov 2004)
Something of an institution, the LFF has a great tradition of supporting short films. Last year saw more than 1000 submissions whittled down to a 47-strong international showcase.

BRADFORD FILM FESTIVAL

www.bradfordfilmfestival.org.uk (March 2005)
Supported by the National Museum of Photography Film and Television, the Bradford Film Festival celebrated its tenth anniversary this year.

SHEFFIELD INTERNATIONAL DOCUMENTARY FESTIVAL

www.sidf.co.uk/ (18-24 Nov 2004)
The place to be seen for anyone interested in documentary filmmaking, SIDF has a well-deserved international reputation and a very professional line-up.

RAINDANCE FILM FESTIVAL

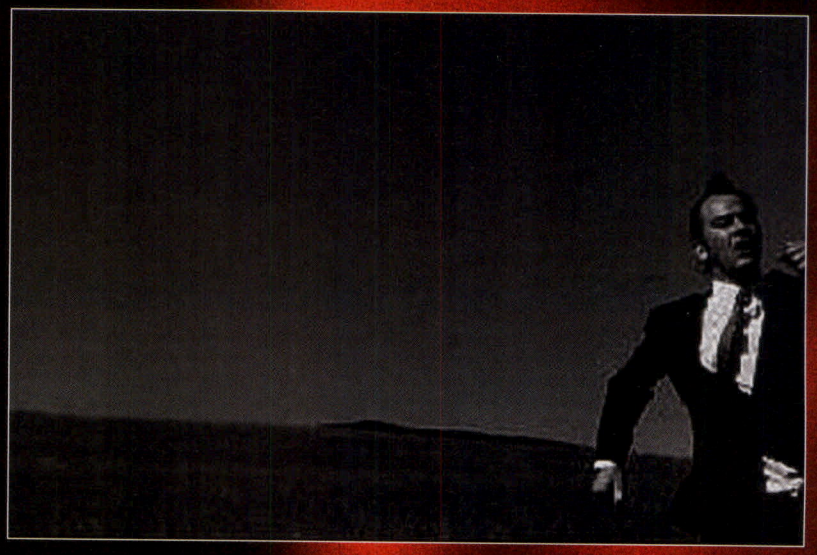
www.raindance.co.uk (1-10 October)
A popular choice for its excellent learning resources, Raindance includes the likes of Mike Leigh among its fans.

HULL INTERNATIONAL SHORT FILM FESTIVAL

www.hullfilm.co.uk (13-17 Oct 2004)
Hull's short film festival, now in its fourth year, celebrates the short as an art form in its own right. Still in its youth, the festival has plans to expand its educational and exhibiting arms. The deadline for this year's entries is 9 August.

SUNDANCE FILM FESTIVAL

www.sundance.org (20-30 Jan 2005)
No list of festivals would be complete without mentioning Robert Redford's brain-child. Now more than 20 years old, the Sundance Film Festival is justly regarded as a source of inspiration for indie filmmakers the world over.



Bristol's Steven Scott Hayward and Alex Kirkland were the winners of the DepicT 2003 competition with their film *Le Cheval 2:1*. The full 90 seconds of comic genius can be viewed at [w] www.depict.org.

ONLINE RESOURCES

The Internet is overflowing with filmmaking resources and outlets. Here are our ten favourites...

WWW.ATOMFILMS.COM

Top of the pile for online distribution, Atom Films had more than ten million viewers access Aardman's *Angry Kid* series. Now, *that's* proper distribution.

WWW.INETFILM.COM

An independent, non-profit site, iNetFilm dedicates itself to showcasing the skill and artistry of independent filmmaking. Creators maintain copyright control.

WWW.BRITISHCOUNCIL.ORG

The British Council not only provides an excellent set of research tools, including exhaustive catalogue of British film, but also provides assistance to filmmakers looking to exhibit their work.

WWW.UNDERGROUNDFILM.ORG

Undergroundfilm is a great resource for independent filmmakers, script writers and musicians, not just displaying the work but hooking up the talent for collaborative output.

WWW.IFILM.COM

iFilm spans the vast gap between big-budget features and no-budget shorts. Submission is free and could see your short playing next to trailers and ads for the site's high-end partners.

WWW.UKFILMCOUNCIL.ORG.UK

Charged with developing a viable UK film industry, the UK Film Council funds and assists more than 100 digital shorts every year. This should be the first port of call for any independent filmmaker.

WWW.SHOOTINGPEOPLE.COM

An indispensable resource for the independent filmmaker, Shooting People is all about collaboration, pulling talent together and giving a voice to independent production.

WWW.TRIGGERSTREET.COM

Kevin Spacey's highly polished filmmaking hub. As well as displaying the work of upcoming talent, the site is also a market and a meeting place.

WWW.3BTV.COM

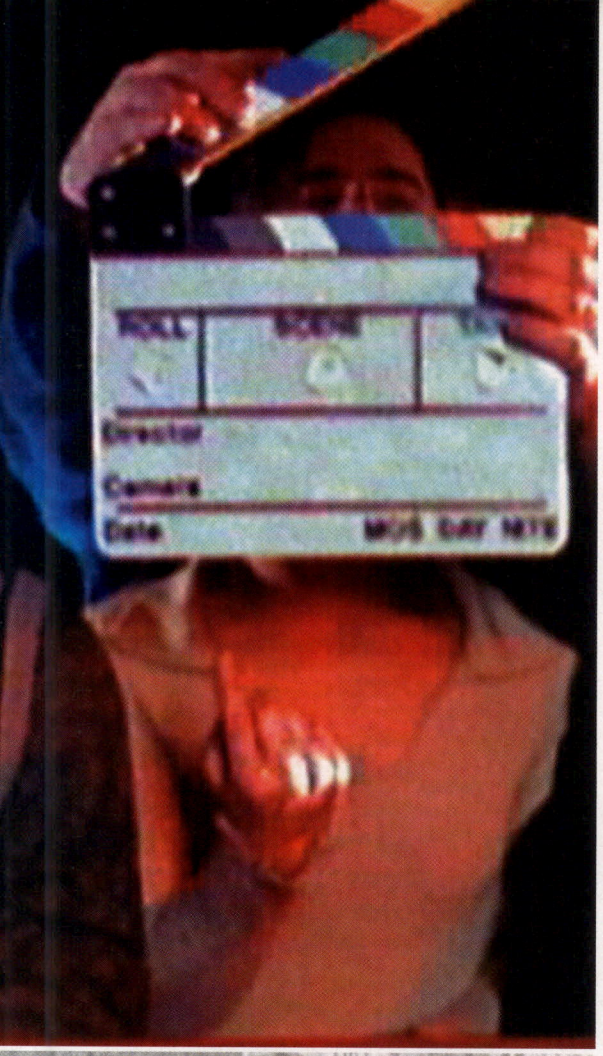
An entirely altruistic venture, 3btv provides independent filmmakers with a forum to show their work and meet their contemporaries. The site is soon to be re-vamped.

WWW.FIRSTFILM.CO.UK

Anyone with a couple of short films under their belt who is looking to make the move to feature-length production should check out this prestigious development scheme.

Made for the UK Film Council and FilmFour, Andrea Arnold's most recent short, *Wasp*, has so far won 16 awards. Tipped for great things, Andrea is now working on a Dogme-inspired feature, *Advanced Party*. Her advice: "Make something you care about and show it to as many people as possible."

Phil Traill's BBC-commissioned short, *Flipped*, tells the story of a man's world in free-fall after his girlfriend leaves him. The film was shot on 35mm because, as Phil explains, "I wanted to use the short as a way of proving I was ready to direct feature films and commercials."



Sonnyboo Productions

Peter John Ross has taught himself desktop video techniques and has mastered the power of the Internet to market his movies...

"The video looked thrown together in 60 seconds, pacing was poor, writing clichéd, embarrassingly unwatchable." That's how one Web surfer responded to *Gratuity*, a 60-second short by Peter John Ross, the man behind Sonnyboo Productions. But the filmmaker is finding such frank criticism easier and easier to take. After five years making short films for the Internet, he's now seeing his works snapped up by networks around the world. *Gratuity* is one of over 15 films signed to Movieola, The Short Film Network, and Peter has further deals with National Lampoon Networks, the U Network, Bravo and more.

Reaching the growing set of short film TV networks is a result of the exposure Peter has gained for his movies online. In 1999, having lost his job, he got Broadband, a Matrox card, Corel *Lumiere*, and a *Computer Arts Special* (the former name of *Computer Arts Projects*) on digital video. Without the cash to attend film school, but with a desire to tell stories using the medium, he decided to teach himself. He chose to start small, and learn the technique through short films. Before long his movies were on iFilm and Undergroundfilm.org, and he's been prolific ever since, having directed 37 shorts including comedies, dramas and science fiction.

Internet rules

Though his ambition is to produce a feature film, when he shoots it's with the Internet in mind. "There's a bunch of basic rules that come in and deal with compression. You can't edit as fast paced as you would for TV. You can't move the camera as much," he explains. "If you do really, really, really need camera movement, you should consider something like a Glidecam or a Steadicam or a dolly to make the movement as smooth as possible so that it will compress better for the Web."

Generally, his films are now shot on DV. This keeps his budgets down and if he can keep spending below $300 and get a network deal for the short, he can break even or make money. "Once you start shooting on film, you get up over $400-$500," he says.

In some cases, he'll still choose film. The recent *Bitter Old Man*, which tackles racial intolerance, was shot on Super 8 – black-and-white and grainy, to fit the theme. The main costs were film processing and conversion to digital. A special effects ending was shot using a Canon GL1 (similar to the XM1), and *Film FX 2* was used to match the film stock, grain and colour. Backgrounds were created in *Photoshop* and animated in *After Effects*. The overall cost was $500, and the film's already being enjoyed on the Internet.

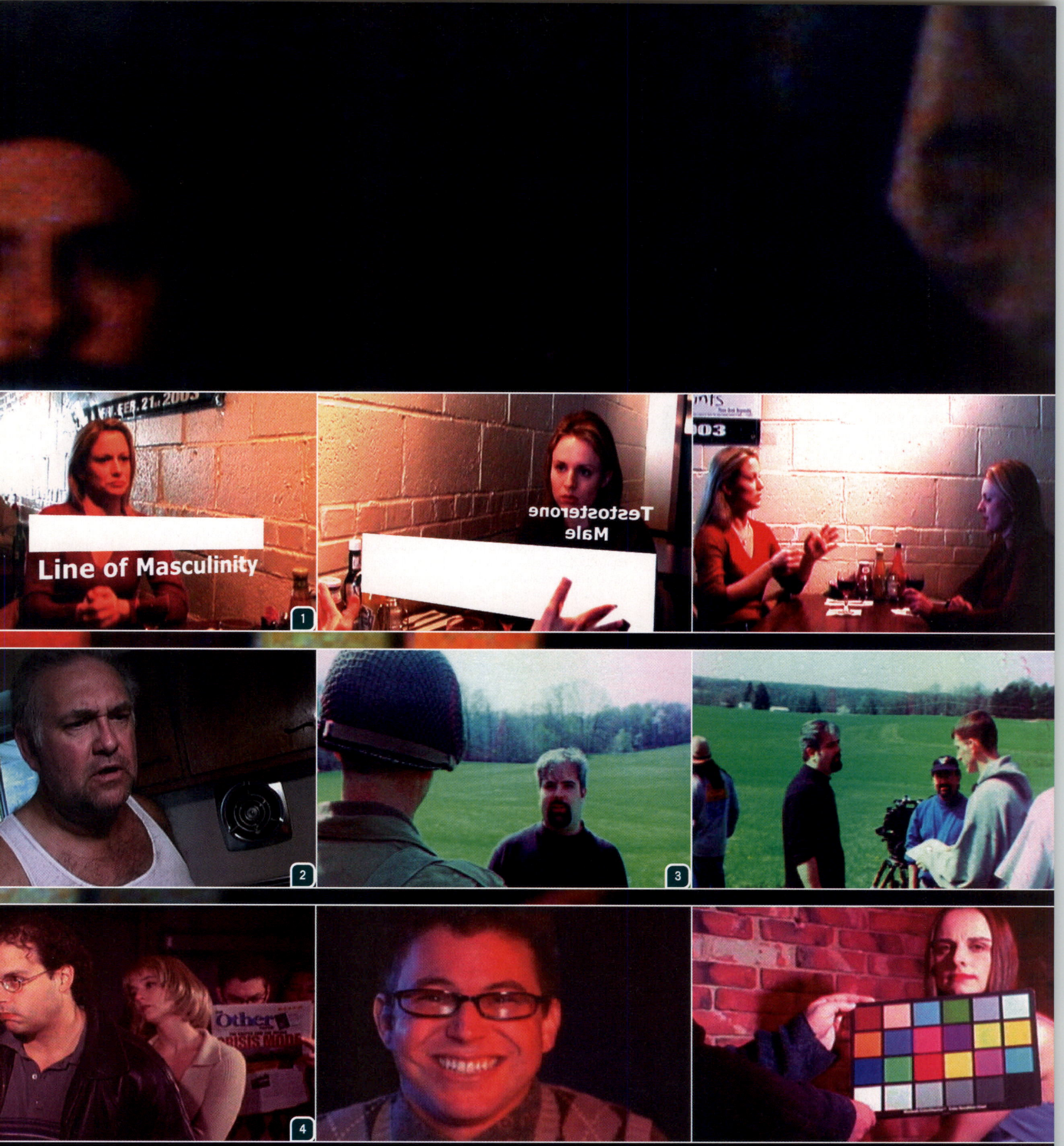
On top of the importance of keeping projects small, Peter has learned the importance of finishing them. It's a major piece of advice he'd give to anyone with a PC, a camera and an idea. "If you start small and you make something short – like 30 seconds or one-minute long – and you finish it, hey, you've got something finished. You don't want to over-extend your ambition. Always finish what you start. There are millions of half-finished projects, even shorts, that never get completed."

Sharing expertise

Unfinished projects never get seen, but for Sonnyboo this has never been a problem. While other filmmakers worry that their ideas will be stolen, or are too humble to make a noise about their work, Peter John Ross is driven by the idea of finding an audience for his movies. He doesn't care too much about idea theft and, alongside showing the films, gives away material (budget sheets, screenwriting templates, film and video tools, royalty-free music and advice on getting your work online) to help other short filmmakers at his Website.

"I am not typical of America or American filmmaking," he says. "Giving it all away for free – it's kind of the antithesis of what the premise of our country is. It's not like American football where there's got to be a winner and there's got to be a loser. It's art. We should all be helping each other. There's too many people who view it as a sport, as in I'm gonna win and you're gonna lose. My movie's gonna do better than your movie..." ca-p

For more information on Sonnyboo Productions visit **[w]** www.sonnyboo.com or call **[t]** 001 614 863 5941.



1. The *Line of Masculinity* is an ironic take on female critiques of men. The very literal image of the line was added to the shot using *Photoshop* and *After Effects*. 2. This is a still from the set of *Bitter Old Man*, one of Sonnyboo's more contentious films. The movie itself was shot in black-and-white using Super 8. 3. Peter John Ross in the process of directing a shoot for his latest project, *The Horrors of War*. The film is Science Fiction, shot on 16mm film, and digitally edited using *Avid Xpress DV*, complete with 3D effects created in *LightWave*. 4. *Licence Exam* turns the American drivers-licence renewal process into a game show. The style was influenced by 70s training videos and Peter stipulated "no camera movement" because the film was shot to appear on the Internet.

The right equipment for the job!

Hardware

CAMERAS A good DV camcorder is essential if you're going to get the best shots. Here are three of our favourites...

JVC GR-DVP9

Price: £840
Company: JVC
Web: www.jvc.co.uk

This camcorder is ideal for anyone looking for a portable, stylish and good-quality model. The GR-DVP9 is a camcorder that will enable you to capture footage anywhere you like – its size is perfect for off-the-cuff work. Its good looks are coupled with a 1.33 Super HS Megapixel CCD, a digital colour nightscope, DV In/Out and a number of other, multimedia-based features.

Canon XM2

Price: £1737
Company: Canon
Web: www.canon.co.uk

The Canon XM2 is a serious camcorder for those wanting a little more out of their DV footage, sporting a Canon L-Series fluorite lens, a 20x optical zoom (100x digital), a quarter-of-an-inch 470k pixel 3CCD with pixel shift, and an optical image stabiliser. The XM2 is one of the best DV cams for colour, low-light performance and image clarity. If you can afford it, it's well worth it.

Canon XL1s

Price: £2299
Company: Canon
Web: www.canon.co.uk

If you have the cash to splash and are looking for a truly world-class DV cam to make your own movies with, then look no further than the top-of-the-range Canon XL1s. The camcorder not only produces broadcast-quality footage, with a host of manual functions, but also features a unique interchangeable lens system for maximum versatility.

WORKSTATIONS/PORTABLES A powerful CPU and good graphics card can only help when editing your short film – but a large hard drive is essential...

PowerBook G4 15-inch 1.5GHz

Price: £1749
Company: Apple
Web: www.apple.com/uk

The PowerBook 15-inch combines awesome power with excellent portability, and the latest models are ideal for anyone wanting a laptop they can take into the field to review the day's work. A 15.2-inch display, DVD-burning SuperDrive, 80GB hard drive, illuminated keyboard, an optional 128MB graphics card and 512MB DDR333 RAM make this a great buy. You could be tempted to wait until the arrival of the much-anticipated PowerBook G5 though.

Apple G5 Dual 2GHz

Price: £2299
Company: Apple
Web: www.apple.com/uk

The G5 caused somewhat of a stir when it arrived last year, and so it should have done. The latest, top-of-the-range model is an editor's dream machine with two incredibly fast 2GHz G5 processors, a whopping 1GHz frontside bus, the capability to house up to 8GB of RAM (yep, 8GB) and a 160GB hard drive. All in all, this is an unbelievable machine.

Evesham Acumen Extreme Edition

Price: £3053
Company: Evesham Technology
Web: www.evesham.co.uk

If your preference is the Windows platform for editing, you may want to check out this powerhouse from Evesham. *XP Pro*, a Pentium 4 3.2GHz Extreme Edition CPU, 2GB RAM, a 250GB 7200rpm HD (plus two 73GB hard drives), and a top-of-the-range nVidia graphics card make for a machine that will easily complete even the most strenuous of editing tasks.

EXTERNAL HARD DRIVES/DVD BURNERS Capture all your footage onto one of these external monsters or burn the best DVD possible...

LaCie Big Disk 500GB

Price: £395
Company: LaCie
Web: www.lacie.co.uk

Take one glance at the name of this hard drive from LaCie and you'll know exactly what it is. 500GB of storage is ample enough for hours and hours of raw DV footage and as an added bonus, the blazing transfer speeds (thanks to FireWire 800, 400 and USB 2 interfaces) make it perfect for any editor.

iPod 40GB

Price: £399
Company: Apple
Web: www.apple.com/uk

Why include an iPod in this list of external hard drives? Simple. As well as being a great MP3 player, the iPod can hold up to 40GB of files, meaning it's perfect for carting around on a shoot, freeing up space on your laptop's hard drive. The cost per MB is high, but you'll get to listen to your favourite tunes on your way home!

LaCie FireWire DVD+/-

Price: £103
Company: LaCie
Web: www.lacie.co.uk

There are stylish DVD burners and then there's the LaCie FireWire DVD+/-. This Porsche-designed model can burn DVD-Rs and DVD+Rs at 4x and connects via FireWire for convenience and speed. What better burner than this top-of-the-range model to accompany you and your laptop?

To create a short film, you don't need extraordinary amounts of cash but, as the saying goes, you get what you pay for...

Software

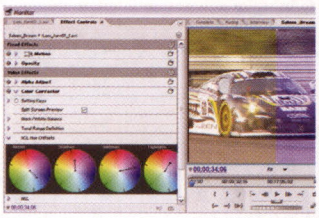
Editing Software You'll need some good editing software to make the most out of your captured footage and get the cut you want!

Avid Free DV

Price: Free
Company: Avid
Web: www.avid.co.uk

Avid has come up with a real crowd-pleaser in *Free DV* – an application that has a host of editing tools, some excellent transitions and great colour-correction tools available at no cost at all. *Avid Free DV* is the editing tool of choice used to create this month's movie project, *Flower Power*. Load up *Free DV* from your cover CD and turn to page 30 to follow our expert editing tutorial.

Premiere Pro 1.5



Price: £616
Company: Adobe
Web: www.adobe.co.uk

It wasn't much of a surprise when Adobe ditched *Premiere* on the Mac platform. But, nevertheless, *Premiere* remains a force to be reckoned with in the world of PC-based DV editing. Some excellent editing tools, professional colour correction features and support for every format under the sun make *Premiere Pro 1.5* a great choice for editing your digital video footage on the PC.

Final Cut Express 2/Pro HD

Price: £199/£699
Company: Apple
Web: www.apple.com/uk

Apple has dominated the video-editing scene on the Mac since the release of *Final Cut Pro 3*, and *Final Cut Pro HD* and *Express* continue to be the best editing tools available on the Mac platform. Some truly professional editing tools, real-time effects, great interface and excellent support for different video formats give these pieces of editing software the edge.

Compositing Good compositing software makes it easy to lift actors from one place and accurately place them in another....

Combustion 3

Price: £877
Company: Discreet
Web: www.discreet.com

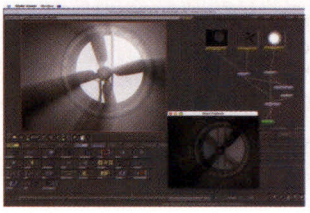
Combustion borrows its interface and compositing features from Discreet's high-end tools *Flame* and *Inferno*. The application itself is easy to use, has a great particle engine and makes light work of keying and re-timing. *Combustion 3* is definitely one of the best compositing applications money can buy.

After Effects 6.5 Professional

Price: £1075
Company: Adobe
Web: www.adobe.co.uk

After Effects has long been the tool of choice for compositors and motion graphic artists alike. With the latest version, you get the industry-standard keying tool Keylight, along with a host of fantastic 2D and 3D compositing tools and a wonderful range of effects. Well worth the asking price. Turn to page 48 to see how it works...

Shake 3.5



Price: £2099
Company: Apple
Web: www.apple.com/uk

Shake has been used in the production of many Hollywood blockbusters, including the recent *Lord of the Rings* trilogy, *Fight Club* and more. Its node-based compositing tools aren't easy to learn, but once you've got the hang of things, you'll discover a creative freedom that is unavailable anywhere else.

DVD authoring Your DVD can play a major part in getting your film noticed – so kit yourself out with some decent software...

iDVD 4

Price: £39 (as part of iLife '04)
Company: Apple
Web: www.apple.com/uk

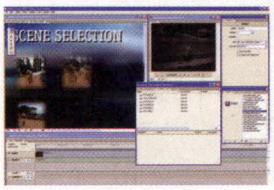
iDVD 4 is incredibly easy to use, fantastic value for money and makes light work of creating pro-quality DVDs at very little cost. If you've recently bought a new Mac, you'll have received this application free as part of iLife '04. If, however, you don't already own it, there's no excuse – it'll only cost you £39!

DVD Studio Pro 3

Price: £349
Company: Apple
Web: www.apple.com

A step up from *iDVD* in both learning curve and features, *DVD Studio Pro* is a fantastic tool for creating advanced DVDs. The application is scalable, meaning you can make it as easy to use or as powerful as you want. A timeline-based track view, along with powerful menu-creation tools and brilliant integration with Apple's other Pro tools make this a winner.

Encore DVD 1.5



Price: £452
Company: Adobe
Web: www.adobe.co.uk

Encore DVD is Adobe's answer to *DVD Studio Pro* and is a great tool for those on the Windows platform. Like Apple's software, *Encore* features an easy-to-use interface, a timeline-based track view and some superb integration (as you would expect) with *Premiere Pro*, *After Effects* and *Photoshop*. Like Apple's tool, this is a great buy.

COMPUTER arts projects INTERACTIVE

CD Contents

Don't miss this month's line-up of software, video training and tutorial files...

CD CONTENTS AT A GLANCE

Avid Free DV (PC and Mac)
FULL EDITING SOFTWARE: Cut your movie like the pros with this fantastic DV-editing app from Avid. Our massive editing tutorial begins on page 30!

Video training
EXCLUSIVE: Fantastic video training from Magnet Media. Discover the power of *After Effects* and learn all about MPEG-4 streaming. Unmissable!

DVD authoring nightmares
Don't make the common DVD authoring mistakes! This guide, in HTML format, will enable you to create fantastic DVDs every time.

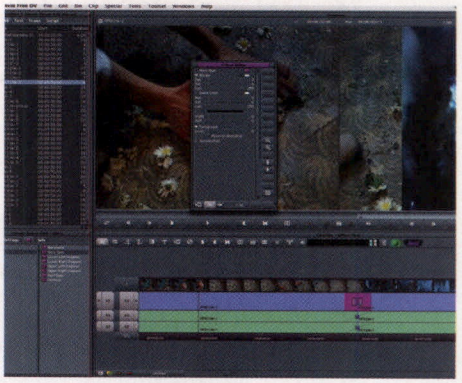
Flower Power
SHORT FILM: Check out the short film that was made exclusively by Christopher Kenworthy for this issue of *Computer Arts Projects!*

Tutorial files
This month, we bring you 360MB of essential footage, takes and effects to make you a better filmmaker. Check out page 12 for the full tutorial listing.

COMPUTER arts INTERACTIVE projects CD60
PC & MAC CD-ROM
Avid Free DV
Capture, edit and add special effects to your film with this fully-working DV-editing application [MAC AND PC]
FULL EDITING SUITE
Avid
MAKE MOVIES LIKE THE PROS!
360MB of essential takes, footage and effects to make you a better filmmaker
PROFESSIONAL VIDEO TRAINING
After Effects and MPEG-4
[MAC AND PC]
WATCH THE SHORT FILM CREATED EXCLUSIVELY FOR THIS ISSUE!

Avid Free DV

Use this fantastic editing software to cut your very own short film!



Avid is one of the leaders in digital video, and its *Free DV* application gives you a taste of its high-end, powerful editing tools. This is a fully-functioning editing suite, along with some superb editing and trimming tools, a timeline supporting two audio and two video tracks, 16 customisable real-time effects, two real-time streams and more!

Avid Free DV also enables you to capture and export your footage easily – for burning to DVD or creating a Web-based movie. Boot up the software from your cover CD, then head off to the URL below to obtain your serial number:

http://www.avid.com/forms/freeDVReg.asp

Now turn to page 30 for our in-depth tutorial...

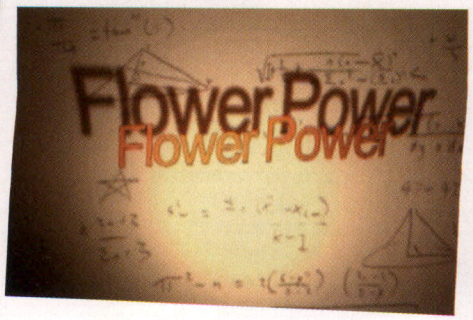
Flower Power

Check out our exclusive short film on your cover CD!

Written and directed by Aussie-based filmmaker Christopher Kenworthy, *Flower Power* is a short tale of botanical experimentation gone wrong. Chris and his cast shot the movie in April in Perth, after extensive storyboarding and planning exclusively for *Computer Arts Projects*.

Not only do we have the short film in its entirety on the CD for you to check out, we also have loads of extra footage, behind-the-scenes stuff plus the script and shot list. So, watch the film and then get cracking on your own. And don't forget to send them in to us at:

Computer Arts Projects, Future Publishing
30 Monmouth Street, Bath, BA1 2BW.



Also on the CD...

You'll find all the files you need to produce this month's movie in the Software/Tutorial files folder on your cover CD. These include over 350MB of footage, takes and special effects for you to experiment with.

Professional video training

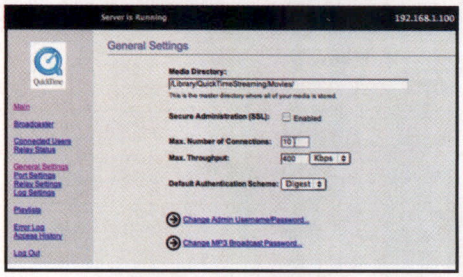
We bring you expert video training in *After Effects* and MPEG-4 from Magnet Media...

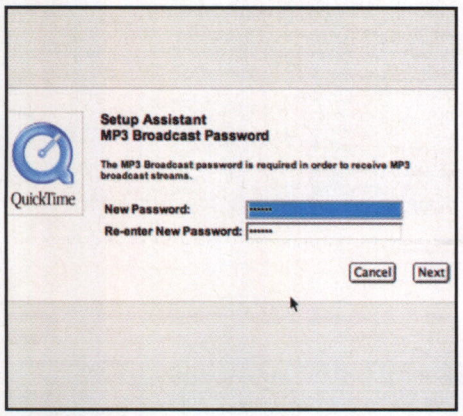
One of the best ways to learn how to use a new piece of software is to see it being used by someone who knows it like the back of their hand. With this in mind, we've teamed up with Magnet Media to bring you some of the best *After Effects* and MPEG-4 training you'll find.

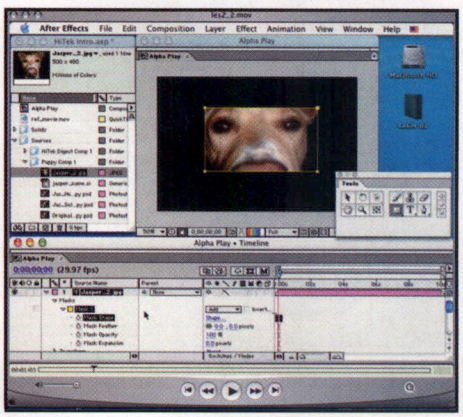
First up this month, we bring you some fantastic *After Effects* training. This seven-minute video introduces you to one of *After Effects*' core features – masking. You'll learn all manner of tricks and will soon be able to composite almost anything. If you're not familiar with *After Effects*, watch this video tutorial before starting our compositing tutorial on page 48.

Second, we have a brilliant tutorial showing you how to set up an MPEG-4 streaming server. If you want to broadcast your short film over the Web, this training will prove invaluable.

For more information on Magnet Media's video training visit: **www.digitalmediatraining.com/**





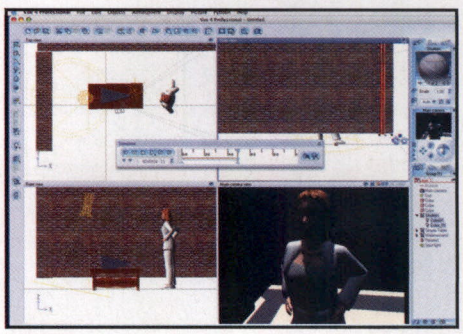


After Effects 6 and Vue 4 Pro

Download the free 30-day trial of Adobe's all-conquering motion graphics and compositing app now!

We couldn't fit the trial versions of *After Effects 6* and *Vue 4 Pro* on this month's CD, due to the amazing amount of raw footage, scenes and effects. But don't worry, you can easily download them using the URLs on the right...

After Effects 6 tryout
http://www.adobe.com/products/tryadobe/main.jsp



Vue 4 Pro tryout
https://secure.e-onsoftware.com/Products/vue4prodemo/

NEXT ISSUE IN COMPUTER arts projects

CUTTING-EDGE MULTIMEDIA

Create fantastic multimedia and Web applications with our in-depth guide to using Director and Flash...

· Create a Flash portfolio
What better way to showcase your work than in an executable *Flash* portfolio with fantastic navigation. We show you how to do it

· Shockwave 3D masterclass
Take a 3D model and, using some Lingo trickery, make it react to key commands. Expert tutorial and 3D model on the CD!

· Flash football game
Learn the secrets behind creating a fantastic penalty shootout game in Macromedia *Flash*

· 60 ActionScript tips
Whether you're a code-wizard or new to *Flash*, these ActionScript tips will be truly invaluable

· Flash and PHP
Hook up *Flash* to database content and create a remarkable Top Trumps-style online game...

· Flash drawing board
Create an interface that enables your site visitors to draw and save their creations! In-depth *Flash* components tutorial

· Top Lingo tips
The best Lingo tips from industry experts. Improve your *Director* skills and create stunning multimedia

· Online MP3 player
Use *Director* to create a fantastic MP3 player, complete with track listings! Exclusive tutorial

All contents correct at time of going to press

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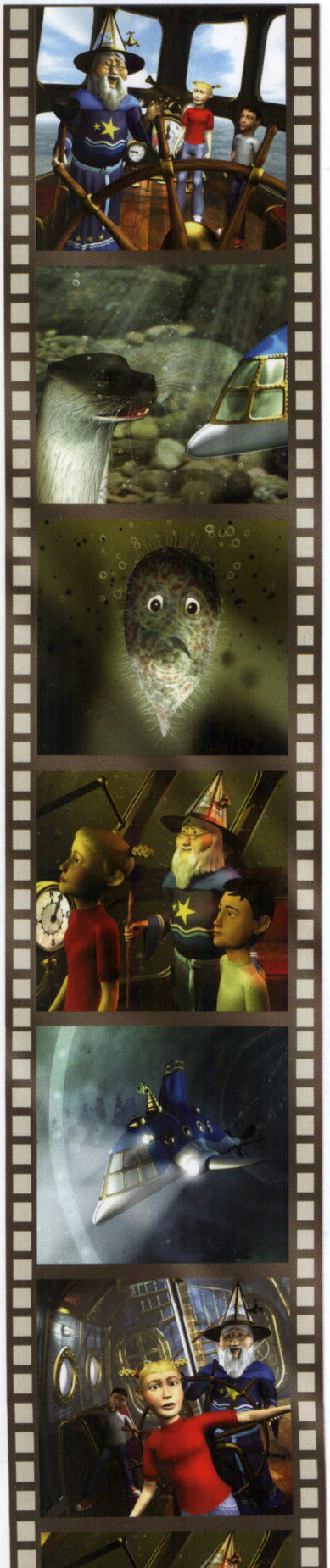
Illuminating 3D Solutions



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